

DVD-SH893M
DVD-SH895M
DVD-SH897M

DVD user manual

imagine the possibilities



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WARNING

TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE THE COVER (OR BACK).
NO USER-SERVICEABLE PARTS ARE INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

| | | |
|---|--|---|
|  | CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN |  |
| This symbol indicates "dangerous voltage" inside the product that presents a risk of electric shock or personal injury. | CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL. | This symbol indicates important instructions accompanying the product. |

Do not install this equipment in a confined space such as a bookcase or similar unit.

WARNING : To prevent damage which may result in fire or electric shock hazard, do not expose this appliance to rain or moisture.

CAUTION : HDD & DVD Recorder USES AN INVISIBLE LASER BEAM WHICH CAN CAUSE HAZARDOUS RADIATION EXPOSURE IF DIRECTED. BE SURE TO OPERATE HDD & DVD Recorder CORRECTLY AS INSTRUCTED.

CAUTION

THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.
DO NOT OPEN COVERS AND DO NOT REPAIR YOURSELF. REFER SERVICING TO QUALIFIED PERSONNEL.

This product satisfies CE regulations when shielded cables and connectors are used to connect the unit to other equipment. To prevent electromagnetic interference with electric appliances, such as radios and televisions, use shielded cables and connectors for connections.

IMPORTANT NOTE

The mains lead on this equipment is supplied with a moulded plug incorporating a fuse. The value of the fuse is indicated on the pin face of the plug. If it requires replacing, a fuse approved to BS1362 of the same rating must be used.

Never use the plug with the fuse cover omitted if the cover is detachable. If a replacement fuse cover is required, it must be of the same colour as the pin face of the plug. Replacement covers are available from your dealer.

If the fitted plug is not suitable for the power points in your house or the cable is not long enough to reach a power point, you should obtain a suitable safety approved extension lead or consult your dealer for assistance.

However, if there is no alternative to cutting off the plug, remove the fuse and then safely dispose of the plug. Do not connect the plug to a mains jack, as there is a risk of shock hazard from the bared flexible cord.

To disconnect the apparatus from the mains, the plug must be pulled out from the mains socket, therefore the mains plug shall be readily operable.

The product unit accompanying this user manual is licenced under certain intellectual property rights of certain third parties. This licence is limited to private non-commercial use by end-user consumers for licenced contents.

No rights are granted for commercial use.

The licence does not cover any product unit other than this product unit and the licence does not extend to any unlicensed product unit or process conforming to ISO/IEC 11172-3 or ISO/IEC 13818-3 used or sold in combination with this product unit. The licence only covers the use of this product unit to encode and/or decode audio files conforming to the ISO/IEC 11172-3 or ISO/IEC 13818-3. No rights are granted under this licence for product features or functions that do not conform to the ISO/IEC 11172-3 or ISO/IEC 13818-3.

PRECAUTION

Important Safety Instructions

Read these operating instructions carefully before using the unit. Follow all the safety instructions listed below. Keep these operating instructions handy for future reference.

- 1) Read these instructions.
- 2) Keep these instructions.
- 3) Heed all warnings.
- 4) Follow all instructions.
- 5) Do not use this apparatus near water.
- 6) Clean only with dry cloth.
- 7) Do not block any ventilation openings, Install in accordance with the manufacturer's instructions.
- 8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- 10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, the point where they exit from the apparatus.
- 11) Only use attachments/accessories specified by the manufacturer.
- 12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
- 13) Unplug this apparatus during lightning storms or when unused for long periods of time.
- 14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

Handling Cautions

- Before connecting other components to this HDD & DVD Recorder, be sure to turn them all off.
- Do not move the HDD & DVD Recorder while a disc is being played, or the disc may be scratched or broken, the HDD & DVD Recorder internal parts may be damaged.
- Do not put a flower vase filled with water or any small metal objects on the HDD & DVD Recorder.
- Be careful not to put your hand into the disc tray.
- Do not place anything other than the disc in the disc tray.
- Exterior interference such as lightning and static electricity can affect normal operation of this HDD & DVD Recorder. If this occurs, turn the HDD & DVD Recorder off and on again with the **STANDBY/ON** button, or disconnect and then reconnect the AC power cord to the AC power outlet. The HDD & DVD Recorder will operate normally.
- Be sure to remove the disc and turn off the HDD & DVD Recorder after use.
- Disconnect the AC power cord from the AC outlet when you don't intend to use the HDD & DVD Recorder for long periods of time.
- Clean the disc by wiping in a straight line from the inside to the outside of the disc.
- Apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.
- The Mains plug is used as a disconnect device and shall stay readily operable at any time.

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Maintenance of Cabinet

For safety reasons, be sure to disconnect the AC power cord from the AC outlet.

- Do not use benzene, thinner, or other solvents for cleaning.
- Wipe the cabinet with a soft cloth.

HDD (Hard Disk Drive)

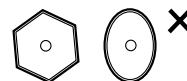
The hard disk has a high storage density, which enables long recording durations and quick access to written data. However, it can easily be damaged by shock, vibration or dust and should be kept away from magnets. To avoid losing important data, observe the following precautions.

- Do not use the HDD & DVD Recorder in a place subject to extreme changes in temperature.
- Do not apply a strong shock to the HDD & DVD Recorder.
- Do not place the HDD & DVD Recorder in a location subject to mechanical vibrations or in an unstable location.
- Do not place the HDD & DVD Recorder on top of a heat source.
- Do not disconnect the AC power cord while the power is on.
- Do not attempt to change the hard disk. This may result in a malfunction.

Should the hard disk be damaged, you cannot recover lost data. The hard disk is only a temporary storage space.

Disc Handling

- Use discs with regular shapes. If an irregular disc (a disc with a special shape) is used, this HDD & DVD Recorder may be damaged.



Holding discs

- Avoid touching the surface of a disc where recording is performed.



DVD-RAM, DVD±RW and DVD±R

- Clean with an optional DVD-RAM/PD disc cleaner (LF-K200DCA1 where available). Do not use cleaners or cloths for CDs to clean DVD-RAM/±RW/±R discs.



DVD-Video, Audio-CD

- Wipe off dirt or contamination on the disc with a soft cloth.

Cautions on handling discs

- Do not write on the printed side with a ball-point pen or pencil.
- Do not use record cleaning sprays or antistatic. Also, do not use volatile chemicals, such as benzene or thinner.
- Do not apply labels or stickers to discs. (Do not use discs fixed with exposed tape adhesive or leftover peeled-off stickers.)
- Do not use scratch-proof protectors or covers.
- Do not use discs printed with label printers available on the market.
- Do not load warped or cracked discs.

Disc Storage

Be careful not to harm the disc because the data on these discs is highly vulnerable to the environment.

- Do not keep under direct sunlight.
- Keep in a cool ventilated area.
- Store vertically.

- Keep in a clean protection jacket.
- If you move your HDD & DVD Recorder suddenly from a cold place to a warm place, condensation may generate on the operating parts and lens and cause abnormal disc playback. If this occurs, do not connect the plug to the power outlet and wait for two hours. Then insert the disc and try to play back again.

Disc Specifications

This unit allows you to record and playback high quality digital video on DVD-RAM/±RW/±R discs or on the HDD.

You can also edit digital images on DVD-RAM/±RW discs or HDD.

Disc Type

❖ DVD-Video

- A digital versatile disc (DVD) can contain up to 135-minutes of images, 8 audio languages and 32 subtitle languages. It is equipped with MPEG-2 picture compression and Dolby digital surrounding, allowing you to enjoy vivid and clear theatre quality images in the comfort of your own home.
- When switching from the first layer to the second layer of a dual-layered DVD Video disc, there may be momentary distortion in the image and sound. This is not a malfunction of the unit.
- Once a DVD-RW/±R recorded in Video Mode is finalised, it becomes DVD-Video.

❖ Audio CD

- An audio disc on which 44.1 kHz PCM Audio is recorded.
- Plays CD-DA format audio CD-R and CD-RW discs.
- The unit may not be able to play some CD-R or CD-RW discs due to the condition of the recording.

❖ CD-R/-RW

- Use a 700MB (80 minutes) CD-R/-RW disc. If possible, do not use a 800MB (90 minutes) or above disc, as the disc may not play back.
- If the CD-R/-RW disc was not recorded as a closed session, you may experience a delay in the early playback time, all recorded files may not play.
- Some CD-R/-RW discs may not be playable with this unit, depending on the device which was used to burn them. For contents recorded on CD-R/-RW media from CDs for your personal use, playability may vary depending on contents and discs.

❖ DVD±R Disc Playback and Recording

- Once a DVD±R recorded in Video Mode is finalised, it becomes DVD-Video.
- You can record onto the available space on the disc and perform editing functions such as giving titles to discs and programmes and erasing programmes before finalising.
- When programming is erased from a DVD±R, that space does not become available. Once an area on a DVD±R is recorded on, that area is no longer available for recording, whether the recording is erased or not.
- It takes about 30 seconds for the unit to complete recording management information after recording finishes.
- This product optimizes the DVD±R for each recording. Optimizing is carried out when you start recording after inserting the disc or turning on the unit. Recording onto the disc may become impossible if optimizing is carried out too many times.
- Playback may be impossible in some cases due to the condition of recording.
- This unit can play back DVD±R discs recorded and finalised with a Samsung DVD video recorder. It may not be able to play some DVD±R discs depending on the disc and the condition of the recording.

❖ DVD-RW Disc Playback and Recording

- Recording and playback can be performed on DVD-RW discs in both the Video and VR Modes.
- Once a DVD-RW recorded in both the Video and VR Modes is finalised, you cannot perform additional recording.
- Once a DVD-RW recorded in Video Mode is finalised, it becomes DVD-Video.
- In both modes, playback can be performed before and after finalisation, but additional recording, deleting and editing can not be performed after finalisation.

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- If you want to record the disc in VR Mode and then record in V Mode, be sure to execute Format. Be careful when executing Format because all the recorded data may be lost.
- A DVD-RW blank disc is initialised to VR Mode when first initialised.

❖ DVD+RW Disc Playback and Recording

- With DVD+RW discs, there is no difference between DVD-Video format(Video mode) and DVD-Video Recording format(VR mode).
- Finalising is generally unnecessary when using a DVD+RW disc.

❖ DVD-RAM Disc Playback and Recording

- Ensure that the recording mode is set to VR mode. Otherwise, this product will not be able to play the recording.
- You cannot play a DVD-RAM in most DVD components due to compatibility issues.
- Only DVD-RAM standard Version 2.0. discs can be played in this unit.
- DVD-RAM recorded on this unit may not work with other DVD components. To determine compatibility with these DVD-RAM discs, refer to the user's manual for the player.
- For cartridge type DVD-RAM discs, remove the cartridge and use the disc only.

Disc Copy

Title Copy Specifications

| Contents | HDD → DVD | DVD → HDD |
|----------------------|--|---------------|
| Recorded Video Title | Supported | Supported |
| Copy Protected Title | Not supported | Not supported |
| Copy Once Title | Move (Deletes the Title in the HDD after copying) | Not supported |

Once "Copy Once programme" has been recorded on the DVD disc, this title cannot be copied to HDD anymore.

But "Copy Once programme" has been recorded on the HDD, this title can be copied to DVD-RW (VR mode) with CPRM or DVD-RAM.

Contents Copy Specifications

| Contents | HDD → DVD or USB | DVD → HDD or USB | USB → HDD or DVD |
|-------------|------------------|------------------|------------------|
| MP3 | Supported | Supported | Supported |
| JPEG(photo) | Supported | Supported | Supported |
| DivX | Supported | Supported | Supported |
| CD-DA | Not supported | Supported | Not supported |

- Disc(CD-DA/CD-R/CD-RW/DVD-RAM, DVD±R(Finalise)/ DVD+RW/DVD-RW(Finalise)) → HDD or USB
- HDD → DVD-R, DVD-RW(V) or USB
- USB → HDD or DVD-R, DVD-RW(V)
- PTP USB is not available when you copy to USB.
- If the disc is finalised through Disc Manager, it can be compatible with PC as a disc with a UDF file system.

COPY PROTECTION

- Many DVD discs are encoded with copy protection.
- This product incorporates copyright protection technology that is protected by methods claims of certain U.S. patents and other intellectual property rights owned by Macrovision Corporation and other rights owners. Use of this copyright protection technology must be authorised by Macrovision Corporation, is intended for home and other limited viewing uses only unless otherwise authorised by Macrovision Corporation. Reverse engineering or disassembly is prohibited.

Protection

This HDD & DVD Recorder can allow you to protect the contents of your discs, as described below.

- Programme-protected : See page 85 "Locking (Protecting) a Title"
- Disc-protected : See page 100 "Disc Protection"
- * DVD-RAM/±RW/±R discs that are incompatible with the DVD-VIDEO format cannot be played with this product.
- * For more information on DVD recording compatibility, consult your DVD-RAM/±RW/±R manufacturer.
- * Use of poor quality DVD-RAM/±RW/±R discs may cause following unexpected problems including, without limitation, recording failure, loss of recorded or edited materials or damage to the HDD & DVD Recorder.

Disc Format

❖ Using MP3 disc

- CD-R/-RW, DVD-RAM/±RW/±R, HDD, USB with MP3 files recorded with UDF, ISO9660 or JOLIET format can be playedback.
- Only MP3 files with the ".mp3" or ".MP3" extension can be played.
- For MP3 files recorded with a VBR(Variable Bit Rates), from 32 Kbps to 320 Kbps, the sound may cut in and out.
- Playable bit-rate range is from 56 Kbps to 320 Kbps.
- Each folder can have up to 500 items including files and sub folders.

❖ Using JPEG disc

- CD-R/-RW, DVD-RAM/±RW/±R, HDD, USB recorded with UDF, ISO9660 or JOLIET format can be playedback.
- Only JPEG files with the ".jpg" or ".JPG" extension can be displayed.
- Each folder can have up to 500 items including files and sub folders.
- MOTION JPEG and progressive JPEG are not supported.

❖ Using DivX disc

- Disc : CD-R/-RW, DVD-RAM/±RW/±R, HDD, USB
- Video File with following extensions can be played. : .avi, .divx, .AVI, .DIVX
- DivX Video (Codec) Format : DivX 3.11, DivX 4.x, DivX 5.x (without QPEL and GMC)
- DivX Audio (Codec) Format : MP3, MPEG1 Audio Layer 2, LPCM, AC3, DTS
- Supported subtitle file formats: .smi, .srt, .sub, .psb, .txt, .ass
- Each folder can have up to 500 items including files and sub folders.
- You cannot play back the disc that is larger than a 720 x 576 pixel resolution.

Line through writing

Do not use the following discs!

- LD, CD-G, CD-I, CD-ROM and DVD-ROM discs should not be used in this product.

[Note]

Disc types that can be played : CD/CD-R/-RW/MP3/JPEG/DVD-Video/DVD-RAM/±RW/±R.

For a DVD-RW/±R disc, which has been recorded in Video Mode on another component, it can play only when finalised.

- Some commercial discs and DVD discs purchased outside your region may not be playable with this product. When these discs are played, either “No disc.” or “Please check the regional code of the disc.” will be displayed.
- If your DVD-RAM/±RW/±R discs is an illegal copy or is not in DVD video format, it may also not be playable.

❖ Disc compatibility

- Not all brands of discs will be compatible with this unit.

❖ Compatible USB Devices at host port

- The USB host port acts as the one of desktop or laptop computer.
 - * This product is compatible with mass storage devices(removable storage devices) and PTP devices (such as digital still cameras)
- The USB host port provides USB2.0 connectivity and also backward compatibility with USB1.1 (USB1.0) devices.
- Supported devices at host port
 - * Mass Storage Devices
 - Digital Still Camera
 - MP3 Player
 - Memory stick
 - Card Reader (One or Multi-slot Card Reader)
 - External Hard disk drive : Only supports FAT32 formatted HDD.
 - Others removable storage devices.
 - * PTP (Picture Transfer Protocol) devices
 - Digital Still Camera (in PTP mode among USB connection modes)
- This product only supports FAT16/32 file system
- This product supports up to maximum 4 partitions
- Notice (Caution)
 - * If you happen to use a bad quality USB cable, the USB device might not be recognized.
 - * The compatibility with MP3 players is somewhat restricted.
 - This product can playback only mp3 format contents.
 - This product does not support the audio contents encrypted by DRM (Digital Right Management)
 - * Either USB hub device or hub extension connectivity is not supported.
 - * There are lots of kinds of USB devices.
 - Some of the USB devices mentioned above might not be compatible with this product.

- Target Peripheral List (TPL)

Since this product is not a Windows XP but an embedded USB host system, naturally the supported USB devices cannot help being limited.

The USB host functionality and compatibility of this product have been proved with following items.
(Except these items , we expect lots of other USB devices will work well with this product)

- * DSC (Digital Still Camera)

| Vendor | Brand |
|-----------|--|
| Samsung | VP-MS11, S800, Pro815, V20, V10, D60, UCA5 |
| Sony | DSC-W50, DSC-R1, DSC-P150, DSC-P200 |
| Canon | IXUS 60, IXUS 600, PowerShot A700, IXUS 700, A620, S80 |
| Panasonic | DMC-FX01, DMC LX1S, DMC-FZ5 |
| Nikon | Coolpix 7900, Coolpix-p3, Coolpix S2 |
| Olympus | C-70 zoom, SP-700, FE5500, C-470Z |
| Fuji | Finepix-F700 |

- * MP3 Player

| Vendor | Brand |
|---------|----------------------------|
| Samsung | YP-T8, YP-U2, YP-T9, YP-P2 |
| i-river | H10, N11, T30, Mplayer |

- * Others

| Product | Vendor | Brand |
|--------------|----------|---------|
| Card Reader | Unicon | UC-601R |
| PMP | Cowon | A2 |
| External HDD | DATAGram | DHC-350 |



- Among MP3 players in the list above, those that do not use Mass Storage Class are not supported.

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GENERAL FEATURES

This unit allows you to record and playback high quality digital video on DVD-RAM/±RW/±R discs or on the HDD. You can also edit digital images on DVD-RAM/±RW discs or HDD.

HDD Recording

- DVD-SH893M

You can record up to Approx. 264 hours of video (in EP 8 Hr mode) on the internal 160 GB (gigabyte) hard disk (HDD).

- DVD-SH895M

You can record up to Approx. 421 hours of video (in EP 8 Hr mode) on the internal 250 GB (gigabyte) hard disk (HDD).

- DVD-SH897M

You can record up to Approx. 534 hours of video (in EP 8Hr mode) on the internal 320 GB (gigabyte) hard disk (HDD).

With both recordable DVD and a high-capacity HDD in the same recorder, you have the flexibility to keep recordings on the HDD for quick access anytime, or record to DVD for archiving or playing on other DVD players. (See pages 69~72)

Copy between HDD and DVD

You can copy recordings from the HDD to recordable DVD, or from recordable DVD to the HDD.

You can only copy in the same record mode as source title. (See page 95)

Simultaneous Recording and Playback

Playback and recording for both the DVD and the built-in hard disk drive (HDD) are completely independent. For instance, While Recording to the HDD, play another title on the HDD or play a previously recorded programme on DVD. While Recording to a DVD, play a previously recorded programme on HDD. (See pages 76~77)

Automated Quality Adjustment for Timer Recording

If FR mode is selected, the video quality is adjusted automatically so that all video for the scheduled time can be recorded onto the free disc space. (See pages 79~81)

Copying data from a digital camcorder using a DV input jack

Record DV Device video onto HDD and DVD-RAM/±RW/±R discs using the DV input jack (IEEE 1394-4pin/4pin). (See page 75)

High quality progressive scan

Progressive scanning provides high resolution and flicker free video. The 10-bit 54-MHz DAC and 2D Y/C Separating Circuitry provides the highest image playback and recording quality. (See page 44)

DivX Certification

DivX® is a digital video format created by DivX, Inc. This is an official DivX Certified or DivX Ultra Certified device that plays DivX video.



HDMI (High Definition Multimedia Interface)

HDMI reduces picture noise by allowing a pure digital video/audio signal path from the HDD & DVD Recorder to your TV.

This HDD & DVD Recorder supports 576p, 720p and 1080i, 1080p.



Anynet+(HDMI CEC)

Anynet+ is a function that can be used to operate the recorder using a Samsung TV remote control, by connecting the HDD & DVD Recorder to a SAMSUNG TV using an HDMI Cable. (This is only available with SAMSUNG TVs that support Anynet+.) (See Page 38)



EZ Record Mode

This function enables you to initialise and Finalise a disc automatically. (See page 48)

EPG functions

EPG is an Advanced Electronic Programme Guide.

With a Remote Control Unit, you can operate full function.

It has a Auto and Manual Scan facility and Channel Organizing (programmable) facility.
















USB Interface for Data Transfer

You can transfer JPEG, MP3 and DivX file of the MP3 player, USB memory or digital camera to a HDD & DVD RECORDER using the USB interface. You can also copy JPEG, MP3 and DivX file of the HDD & DVD RECORDER to MP3 player, USB memory or digital camera using the USB interface.

BEFORE READING THE USER'S MANUAL

Make sure to check the following terms before reading the user manual.

Icons that will be used in manual

| Icon | Term | Definition |
|---|------------------|---|
|  | HDD | This involves a function available on the HDD. |
|  | DVD | This involves a function available on DVD or DVD±R/-RW(V) discs that have been finalised. |
|  | RAM | This involves a function available on DVD-RAM. |
|  | -RW | This involves a function available on DVD-RW. |
|  | -R | This involves a function available on DVD-R. |
|  | +RW | This involves a function available on DVD+RW. |
|  | +R | This involves a function available on DVD+R. |
|  | CD-DA | This involves a function available on a data CD (CD-R or CD-RW). |
|  | JPEG | This involves a function available on CD-R/-RW, DVD±R/±RW/-RAM discs or HDD. |
|  | MP3 | This involves a function available on CD-R/-RW, DVD±R/±RW/-RAM discs or HDD. |
|  | DivX | This involves a function available on CD-R/-RW, DVD±R/±RW/-RAM discs or HDD. |
|  | Caution | This involves a case where a function does not operate or settings may be cancelled. |
|  | NOTE | This involves tips or instructions on the page that help each function operate. |
|  | One-Touch button | A function that can be operated by using only one button. |
|  | USB | This involves a function available on USB. |

About the use of this user's manual

- 1) Be sure to be familiar with Safety Instructions before using this product. (See pages 2~9)
- 2) If a problem occurs, check the Troubleshooting. (See pages 104~105)

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HOW TO USE THE HDD & DVD RECORDER

Step 1 : Select the disc type or HDD

Please check available disc type before recording.



If you want to repeatedly record on the same disc or you want to edit the disc after recording, select a rewritable DVD±RW or DVD-RAM type disc. If you want to save a recording without any changes, choose a non-rewritable DVD±R. You can record files directly to the built-in HDD or edit a recorded file.

Step 2 : Format the disc to start recording

Unlike a VCR, the HDD & DVD Recorder starts formatting when an unused disc is inserted. This is required for the preparation of recording on a disc.

Using the HDD

Formatting unnecessary.

Using a DVD-RAM

This type of disc can be formatted in DVD-Video Recording format (VR mode). You can edit recorded images and create a playlist in a specific sequence according to your requirements.

Using a DVD-RW

This type of disc can be formatted in either DVD-Video format (V mode) or DVD-Video Recording format (VR mode). For an unused disc, a message that asks whether to initialise a disc or not. If you select "DVD-VR" or "DVD-V", initialising will be started. You can play a Video mode disc on various DVD components. A VR mode disc allows more varied editing.

Using a DVD-R

Formatting disc is unnecessary and only V Mode Recording is supported. You can play these types of discs on various DVD components only when they have been finalised.

Using a DVD+RW

For an unused DVD+RW disc, a message that asks whether to format a disc or not. If you select "DVD+RW", formatting will be started.

Using a DVD+R

This type of disc will be formatted automatically.

Step 3 : Recording

There are two different recording methods, Direct Recording and Timer Recording. Timer recording is classified as follows:

Recording mode : XP (high quality mode), SP (standard quality mode), LP (long recording mode), and EP (extended mode) according to the recording mode. When recording is set in the FR mode, the best quality picture is recorded with regards to the remaining time on the disc.

Step 4 : Playing

You can select the title you want to play in a displayed menu and then immediately start playback. A DVD consists of sections, called titles, and sub- sections, called chapters.

Step 5 : Editing a recorded disc

Editing on discs is easier than conventional video tapes. The HDD & DVD Recorder supports many different edit functions, possible only with DVDs and HDD.

With a simple and easy edit menu, you can operate various edit functions, such as delete, copy, rename, lock, etc., on a recorded title.

Creating a playlist (DVD-RAM/-RW in VR mode, HDD)

With this HDD & DVD Recorder, you can create a new playlist on a disc and edit it without the original, pre-existing recording.

Step 6 : Finalising & Playing on other DVD components

To play your DVD on other DVD components, finalising may be necessary. First, finish all editing and recording operations, then finalise the disc.

When using a DVD-RW disc in VR Mode

DVD discs recorded in VR mode can only be played back in DVD recorders, not players.

When using a DVD-RW disc in Video Mode

The disc should be finalised first to enable playback on anything other than this HDD & DVD Recorder. No more editing or recording can be made on the disc once it has been finalised. To enable recording on the disc again, the disc must be unfinalised.

When using a DVD±R disc

You should finalise the disc to play it on a component other than this HDD & DVD Recorder. You cannot edit or record on the disc once it has been finalised.



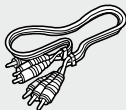
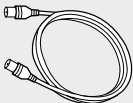


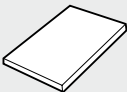
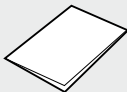
- You can finalise the disc automatically using EZ Record function. (See page 48)

Line through writing

UNPACKING

Accessories

Check for the supplied accessories below.

| | | |
|---|---|---|
|  |  |  |
| Video/Audio Cable | RF Cable for TV | Remote Control |
|  |  |  |
| Batteries for Remote Control (AAA Size) | Instruction Manual | Quick Guide |

Preparing the Remote Control

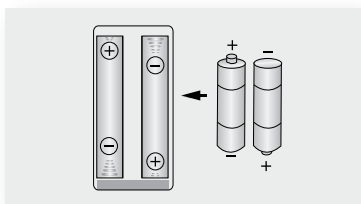
Install Batteries in the Remote Control

- Open the battery cover on the back of the remote control.
- Insert two AAA batteries. Make sure that the polarities (+ and -) are aligned correctly.
- Replace the battery cover.

If the remote does not operate properly :

- Check the polarity +/- of the batteries (Dry-Cell)
- Check if the batteries are drained.
- Check if remote sensor is blocked by obstacles.
- Check if there is any fluorescent lighting nearby.

Dispose of batteries according to local environmental regulations. Do not put them in the household trash.



To determine whether your television is compatible, follow the instructions below.

1. Switch your television on.
2. Point the remote control towards the television.
3. Press and hold the TV STANDBY/ON button and enter the two-figure code corresponding to the brand of your television, by pressing the appropriate number buttons.

● Controllable TV Codes

| BRAND | BUTTON |
|--------------------|--|
| SAMSUNG | 01, 02, 03, 04, 05, 06, 07, 08, 09 |
| AIWA | 82 |
| ANAM | 10, 11, 12, 13, 14, 15, 16, 17, 18 |
| BANG & OLUFSEN | 57 |
| BLAUPUNKT | 71 |
| BRANDT | 73 |
| BRIONVEGA | 57 |
| CGE | 52 |
| CONTINENTAL EDISON | 75 |
| DAEWOO | 19, 20, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34 |
| EMERSON | 64 |
| FERGUSON | 73 |
| FINLUX | 06, 49, 57 |
| FORMENTI | 57 |
| FUJITSU | 84 |
| GRADIENTE | 70 |
| GRUNDIG | 49, 52, 71 |
| HITACHI | 60, 72, 73, 75 |
| IMPERIAL | 52 |
| JVC | 61, 79 |
| LG | 06, 19, 20, 21, 22, 78 |
| LOEWE | 06, 69 |
| LOEWE OPTA | 06, 57 |
| MAGNAVOX | 40 |
| METZ | 57 |
| MITSUBISHI | 06, 48, 62, 65 |
| MIVAR | 52, 77 |
| NEC | 83 |
| NEWSAN | 68 |

| BRAND | BUTTON |
|--------------|------------------------|
| NOBLEX | 66 |
| NOKIA | 74 |
| NORDMENDE | 72, 73, 75 |
| PANASONIC | 53, 54, 74, 75 |
| PHILIPS | 06, 55, 56, 57 |
| PHONOLA | 06, 56, 57 |
| PIONEER | 58, 59, 73, 74 |
| RADIOLA | 06, 56 |
| RADIOMARELLI | 57 |
| RCA | 45, 46 |
| REX | 74 |
| SABA | 57, 72, 73, 74, 75 |
| SALORA | 74 |
| SANYO | 41, 42, 43, 44, 48 |
| SCHNEIDER | 06 |
| SELECO | 74 |
| SHARP | 36, 37, 38, 39, 48 |
| SIEMENS | 71 |
| SINGER | 57 |
| SINUDYNE | 57 |
| SONY | 35, 48 |
| TELEAVA | 73 |
| TELEFUNKEN | 67, 73, 75, 76 |
| THOMSON | 72, 73, 75 |
| THOMSON ASIA | 80, 81 |
| TOSHIBA | 47, 48, 49, 50, 51, 52 |
| WEGA | 57 |
| YOKO | 06 |
| ZENITH | 63 |

Result : If your television is compatible with the remote control, it will switch off.
It is now programmed to operate with the remote control.



- If several codes are indicated for your television brand, try each one in turn until you find one that works.
- If you replace the remote control's batteries, you must set the brand code again.

Then you can control the television using the following buttons after pressing the TV button.

| Button | Function |
|---------------|--|
| TV STANDBY/ON | Used to switch the television on and off. |
| SOURCE | Used to select an external source. |
| TV VOL (+ -) | Used to adjust the volume of the television. |
| PROG (▲ ▼) | Used to select the desired channel. |
| TV MUTE | Used to toggle the sound on and off. |
| Number | Used to input number directly. |

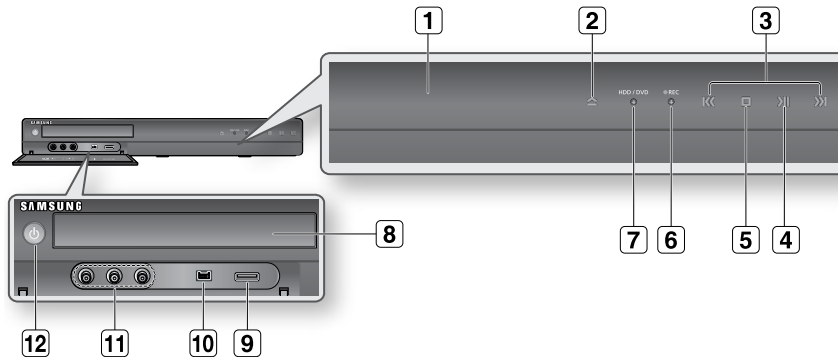


- The functions listed above does not necessarily work on all televisions. If you encounter problems, operate the television directly.

Line through writing

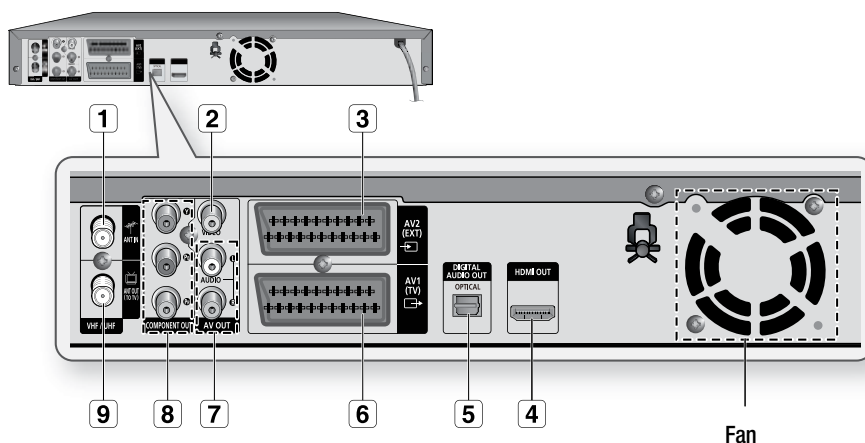
DESCRIPTION

Front Panel (DVD-SH893M/895M/897M)



| | | |
|-----------|----------------------------|--|
| 1 | DISPLAY | Displays the playing status, time, etc. |
| 2 | OPEN/CLOSE button | Opens and closes the disc tray. |
| 3 | SEARCH/SKIP buttons | Goes to the next title/chapter/track or goes back to the previous title/chapter/track. (Playback mode) Select TV preset channels. (Stop mode) |
| 4 | PLAY/PAUSE button | Plays a disc or pauses playback. |
| 5 | STOP button | Stops disc playback. |
| 6 | REC button | Starts recording. |
| 7 | HDD/DVD button | Selects HDD/DVD mode. |
| 8 | DISC TRAY | Opens to accept a disc. |
| 9 | USB HOST | Connects to digital still camera, MP3 player, memory stick, Card reader, external HDD or other removable storage devices. |
| 10 | DV-INPUT | Connects to external digital equipment with a DV jack. (such as a camcorder) |
| 11 | AV INPUT 3 | Connects to external equipment. |
| 12 | STANDBY/ON button | Turns the HDD & DVD Recorder on and off . |

Rear Panel



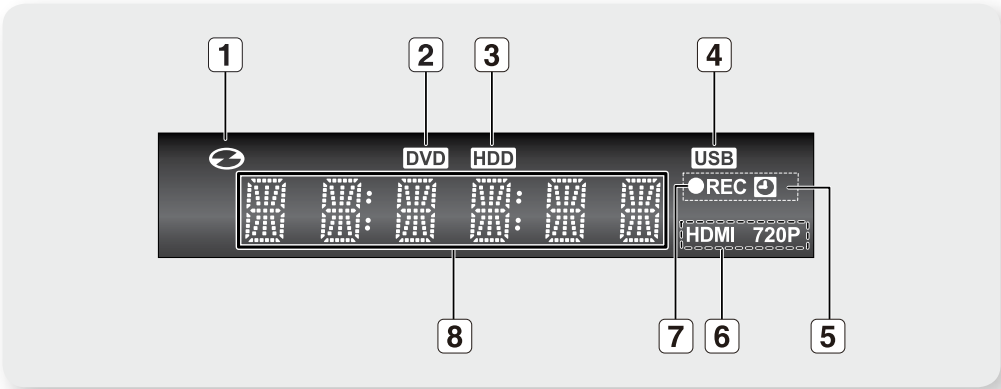
Fan

The fan always revolves when the power is on. Ensure a minimum of 10 cm clear space on all sides of the fan when installing the product.

| | | |
|----------|---------------------------------------|---|
| 1 | In from aerial connector | Connects RF cable from antenna. |
| 2 | VIDEO OUT | Connects the input of external equipment using a Video cable. |
| 3 | AV2(EXT) INPUT SCART Connector | Connects to equipment having SCART output jack. |
| 4 | HDMI OUT | Connects to equipment having HDMI input. |
| 5 | DIGITAL AUDIO OUT(OPTICAL) | Connects to an amplifier having a digital optical audio input jack. |
| 6 | AV1(TV) OUTPUT SCART Connector | Connects to equipment having SCART input jack. |
| 7 | AUDIO OUT | Connects to the audio input of external equipment using audio cables. |
| 8 | COMPONENT VIDEO OUT | Connects to equipment having Component video input. |
| 9 | Out to TV connector | Connects RF cable to TV antenna input. |

Line through writing

Front Panel Display

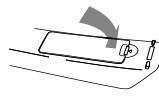
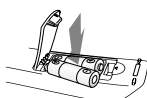


| | | |
|---|--------------------|---|
| 1 | In Disc Indicator | Lights status icon. |
| 2 | DVD VIEW Indicator | Lights when DVD mode is selected. |
| 3 | HDD VIEW Indicator | Lights when HDD mode is selected. |
| 4 | USB VIEW Indicator | Lights when USB mode is selected. |
| 5 | TIMER Indicator | Lights to indicate the timer record mode. |
| 6 | HDMI Indicator | Lights to indicate when HDMI is connected and HDMI resolution status. |
| 7 | REC Indicator | Lights in the record mode. |
| 8 | STATUS Indicator | Playing time/clock/current status indicator. |

TOUR OF THE REMOTE CONTROL

Your HDD & DVD Recorder remote control will work with Samsung televisions and compatible brands.

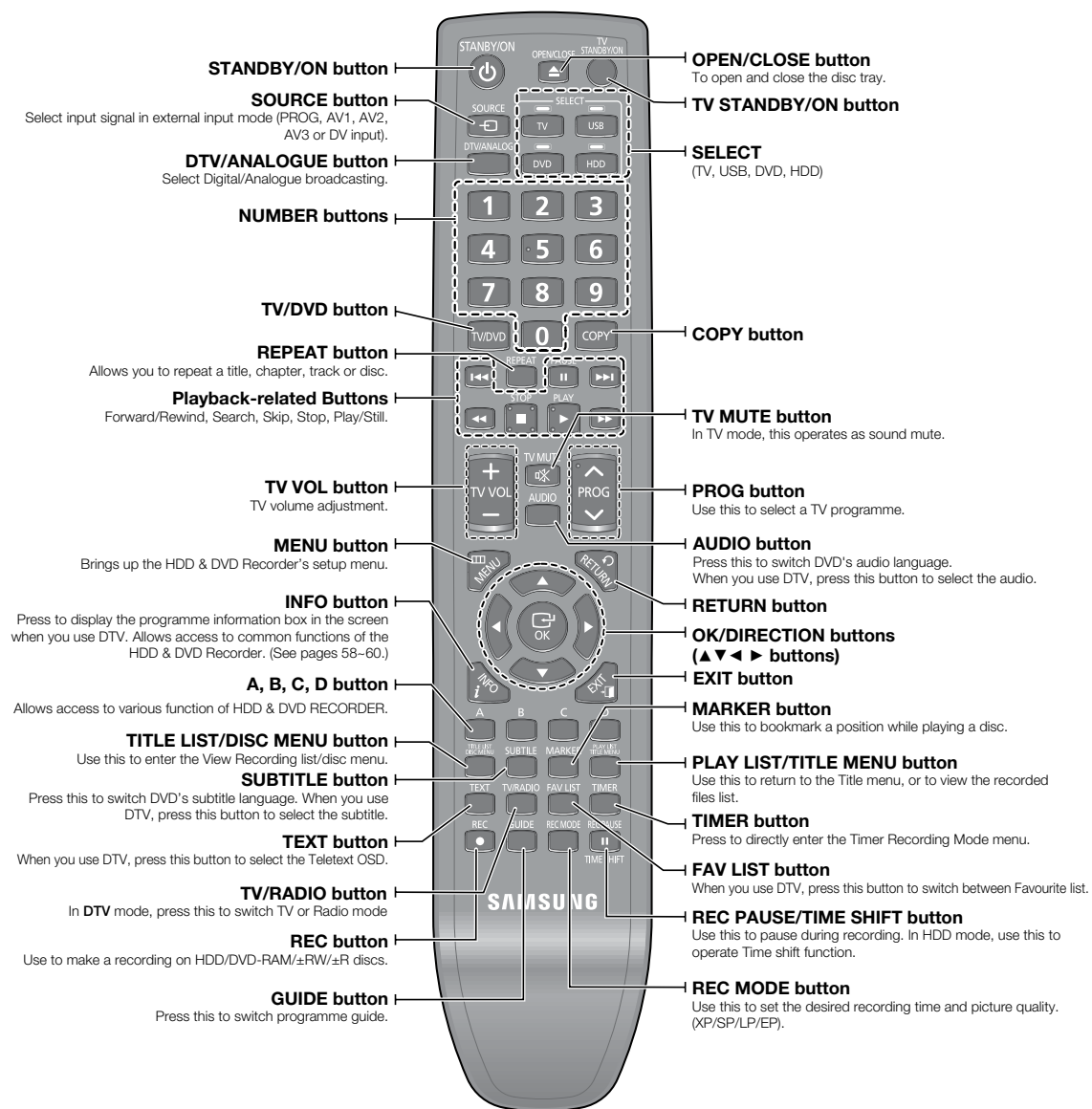
Installing batteries in the Remote Control



1. Lift the cover at the back of the remote control upward as shown.

2. Install two AAA size batteries.
Make sure to match the "+" and "-" ends of the batteries with the diagram inside the compartment.

3. Replace the cover.
Assuming typical TV usage, the batteries last for about one year.



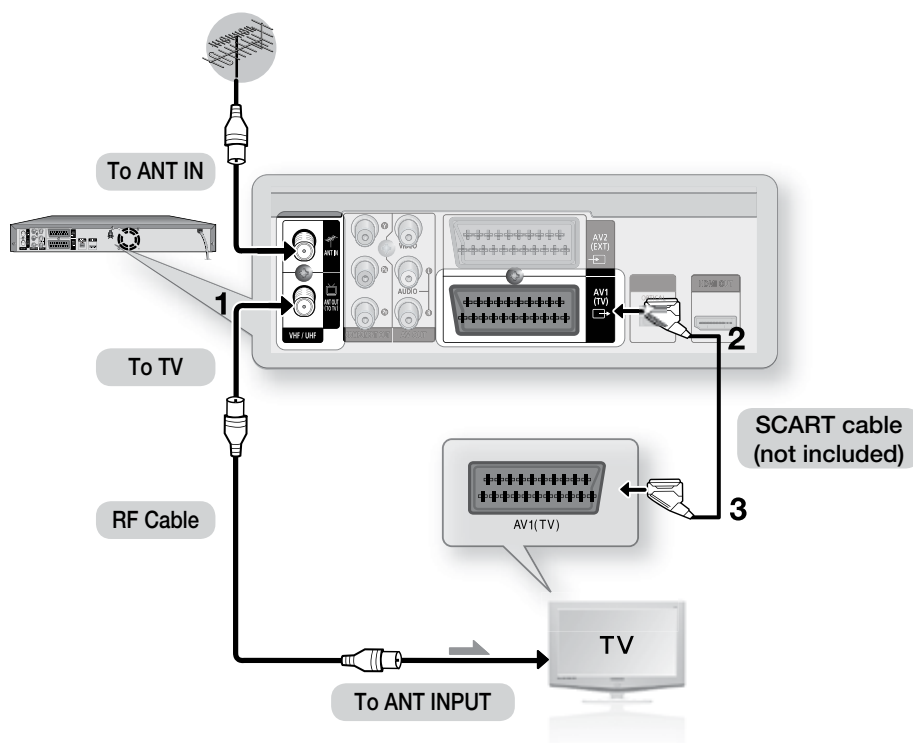
Connecting & Setting up

CONNECTING THE HDD & DVD RECORDER

This section involves various methods of connecting the HDD & DVD Recorder to other external components and required initial setting modes.

You can connect your HDD & DVD Recorder to the television using the SCART cable if the appropriate input is available on the television.

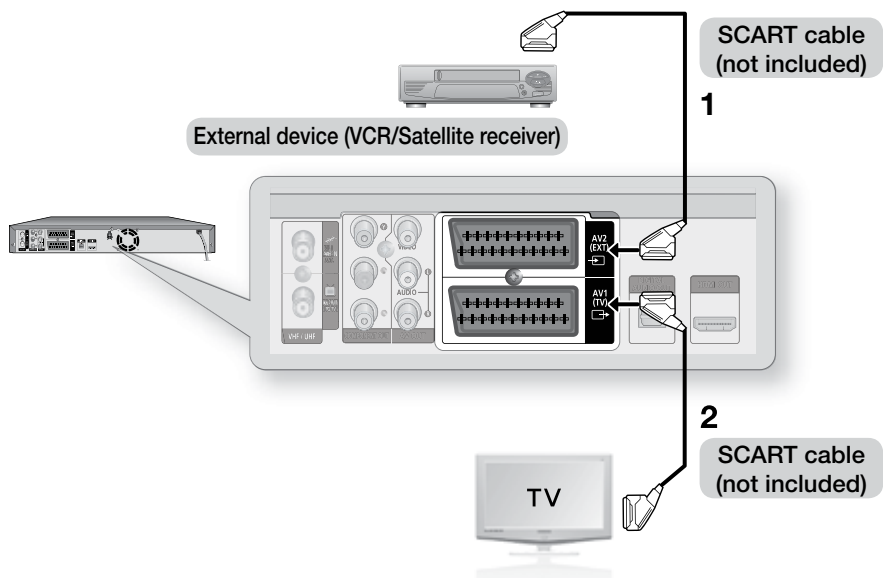
1. Connect the RF cable as shown.
2. Connect one end of the SCART cable to the AV1 socket on the rear of the HDD & DVD Recorder.
3. Plug the other end into the appropriate connector on the television.
4. Plug in the HDD & DVD Recorder and TV
5. Turn on the HDD & DVD Recorder and TV.
6. Press the **SOURCE** button on your TV remote control until the Video signal from the HDD & DVD Recorder appears on the TV screen.



- The RF cable connection of this product sends only signals of TV. You must connect SCART cable or Audio/Video cables to watch output from your HDD & DVD Recorder.

ADDITIONAL CONNECTIONS

You can connect your HDD & DVD Recorder to a External device (VCR/Satellite receiver).



- DVD mode

1. Connect the AV2 connector of HDD & DVD Recorder and External device (VCR/Satellite receiver) using a SCART cable.
2. Connect the AV1 connector to the SCART AV connector on the TV.
3. Turn on the HDD & DVD Recorder, External device (VCR/Satellite receiver) and TV.
4. Set Input mode on AV2.

- TV mode

1. Press the TV/DVD button on remote control, then "TV" appear on Front display.
(or turn off HDD & DVD Recorder.)
2. You can watch programmes from a satellite or digital tuner connected to this HDD & DVD Recorder, even when the HDD & DVD Recorder is turned off.

Connecting & Setting up

OTHER TYPES OF CONNECTIONS WITH THE VIDEO OUTPUT CABLE

There are several ways to output video signal not using scart cables. Select one of the following video connections that best suits you below.

- **Case 1** : Connecting to a Video (Composite) output jack
- **Case 2** : Component Video output jacks

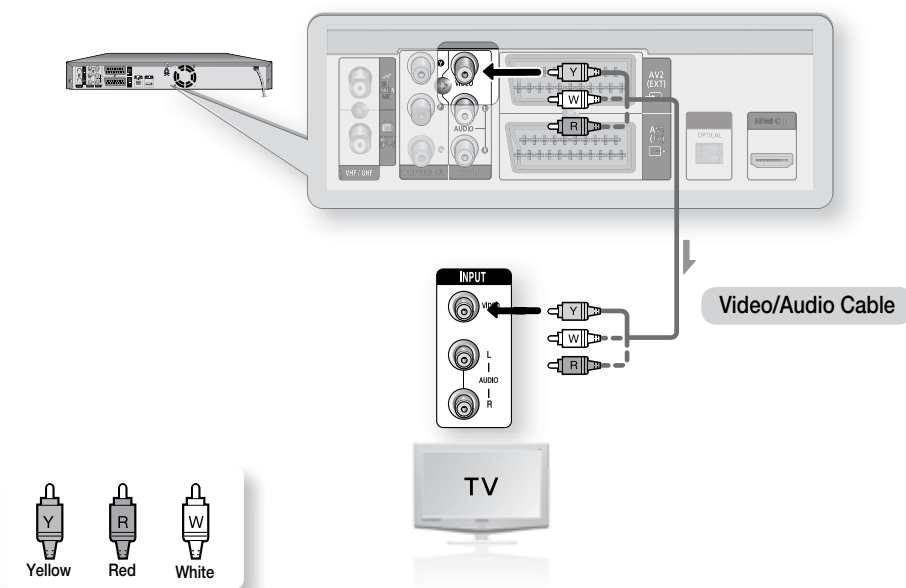
Component video and Progressive Output Modes

- Component video output is available only if your TV supports Component video input.
If Component video output does not work, check the TV connections and the TV input selection settings.
- Compared to standard interlaced video, progressive scan doubles the amount of video lines fed to your TV, resulting in a more stable, flicker-free, clear image than interlaced video. This is only available with TVs that support progressive scan.
- Progressive Scan Output (576P)
Consumers should note that not all high definition television sets are fully compatible with this product and may cause artifacts to be displayed in the picture, in case of 576 progressive scan picture problems, It is recommended that the user switch the connection to the 'standard definition' output. If there are questions regarding our TV set compatibility with this model 576P HDD & DVD Recorder, please contact our customer service centre.

Case 1 : Connecting to a Video (Composite) output jack

You will enjoy regular quality images.

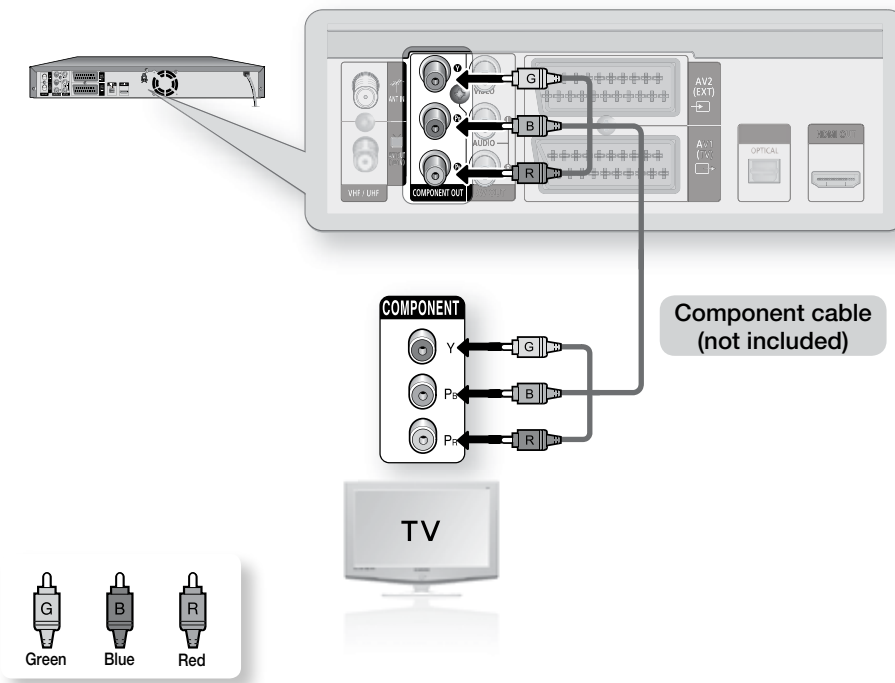
1. Connect a video (Yellow) cable between the VIDEO (yellow) OUT jack on HDD & DVD Recorder and VIDEO (yellow) INPUT jack on your TV (or AV amplifier).
2. Connect audio cables (white and red) between the AUDIO OUT jacks on the HDD & DVD Recorder and AUDIO IN jacks on TV (or AV amplifier). (See pages 26~28)



Case 2 : Component Video output jacks

You will enjoy high quality and accurate colour reproduction images.

1. Connect Component video cables(not supplied) between the COMPONENT OUT(Y, P_B, P_R) jacks on HDD & DVD Recorder and COMPONENT IN(Y, P_B, P_R) jacks on your TV.
2. Connect audio cables (white and red) between the AUDIO OUT jacks on the HDD & DVD Recorder and AUDIO IN jacks on TV (or AV amplifier).
(See pages 26~28).
3. After connecting, refer to the page 44.



- Make sure that the colour coded connections match. The Y, P_B, P_R component output jacks of your HDD & DVD Recorder must be connected to the exact corresponding component input jacks on your TV.
- Progressive setting is only available when the Video Out is set to Component.
(See page 44)

Connecting & Setting up

OTHER TYPES OF CONNECTIONS WITH THE AUDIO OUTPUT CABLE

There are several ways to output audio signal not using scart cables. Select the audio connection that best suits you below.

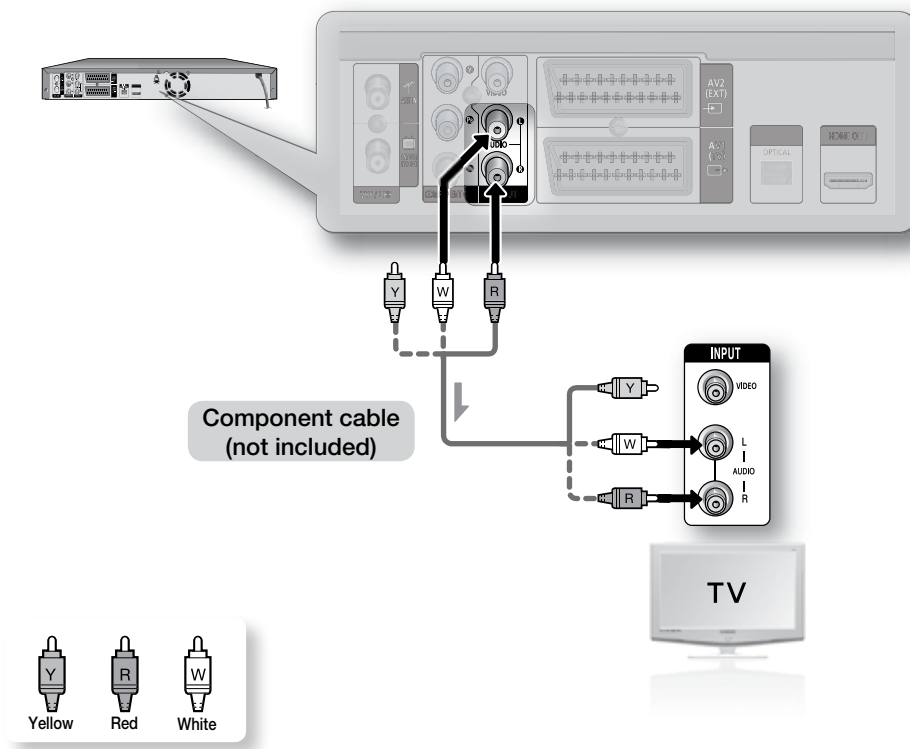
- **Case 1** : Connecting to your TV
- **Case 2** : Connecting to a stereo amplifier with AV output jacks
- **Case 3** : Connecting to an AV amplifier with a digital output jack

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Manufactured under licence from Dolby Laboratories. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories.

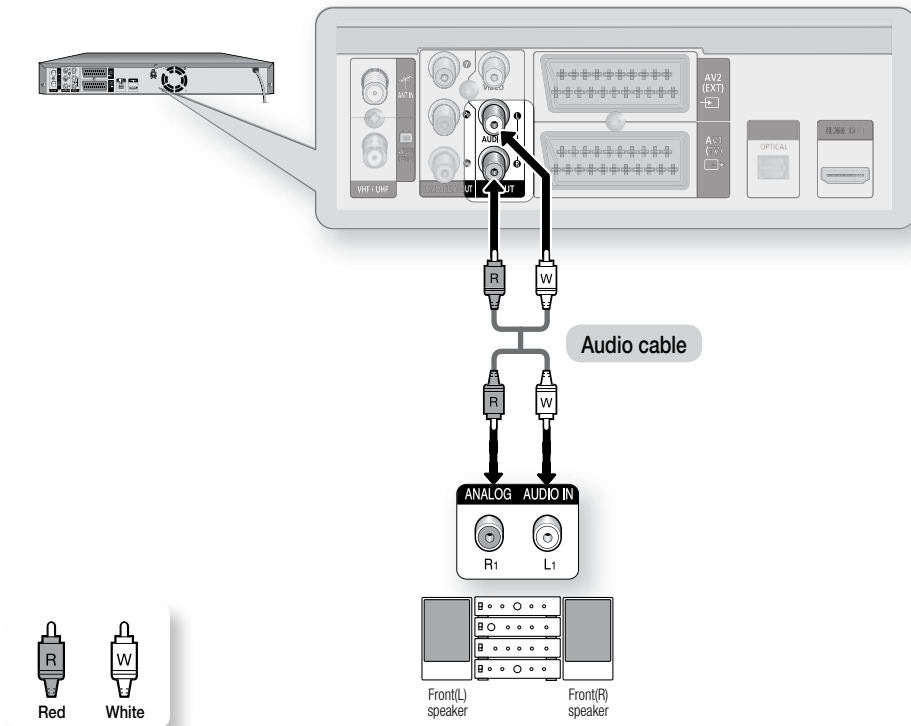
Case 1 : Connecting to your TV

If your TV has audio input jacks, use this connection.



Case 2 : Connecting to a stereo amplifier with AV output jacks

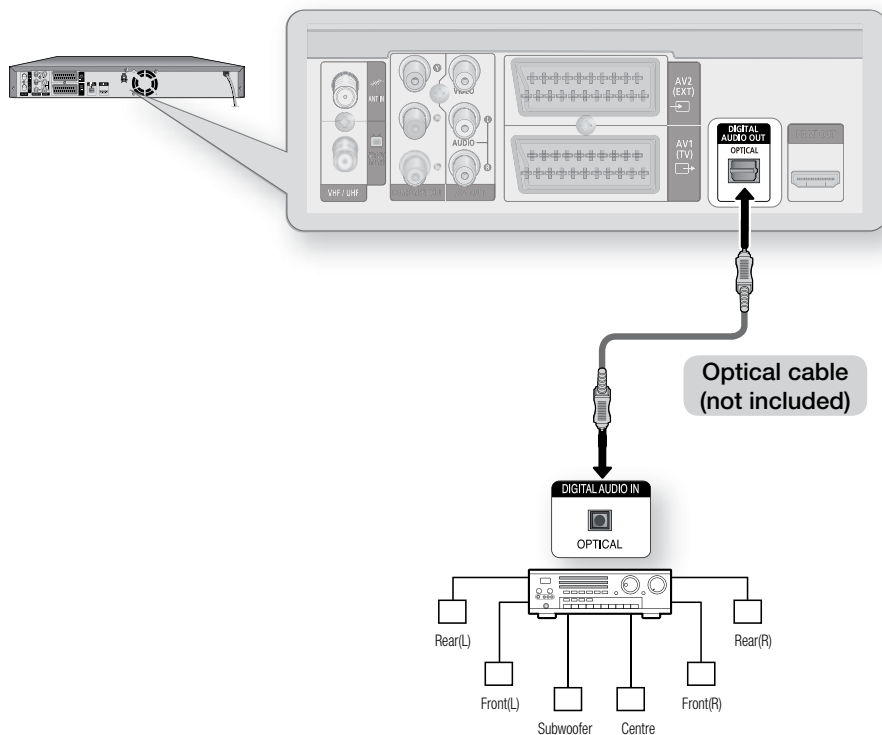
If your stereo amplifier only has AUDIO INPUT jacks (L and R), use the AUDIO OUT jacks



Connecting & Setting up

Case 3 : Connecting to an AV amplifier with a digital output jack

If your AV amplifier has a Dolby Digital, MPEG2 or DTS decoder and a digital input jack, use this connection. To enjoy Dolby Digital, MPEG2 or DTS sound, you will need to set up the audio settings. According to your amplifier, connect to an optical cable. (See pages 42~43)



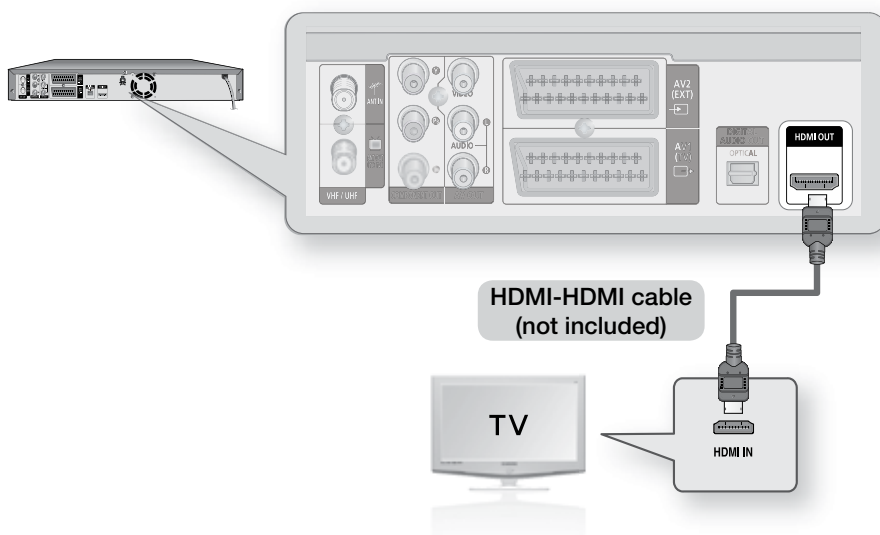
CONNECTING HDMI/DVI TO A TV

If your TV has a HDMI/DVI input, connect HDMI/DVI Adapter cable to a TV. You will enjoy high quality images.

- **Case 1** : Connecting to a TV with HDMI Jack
- **Case 2** : Connecting to a TV with DVI Jack

Case 1 : Connecting to a TV with HDMI Jack

- Using the HDMI cable (not supplied) connect the HDMI OUT jack on the rear of the HDD & DVD Recorder to the HDMI IN jack of your TV.
- Press the input selector on your TV remote control until the HDMI signal from the HDD & DVD Recorder appears on your TV screen.

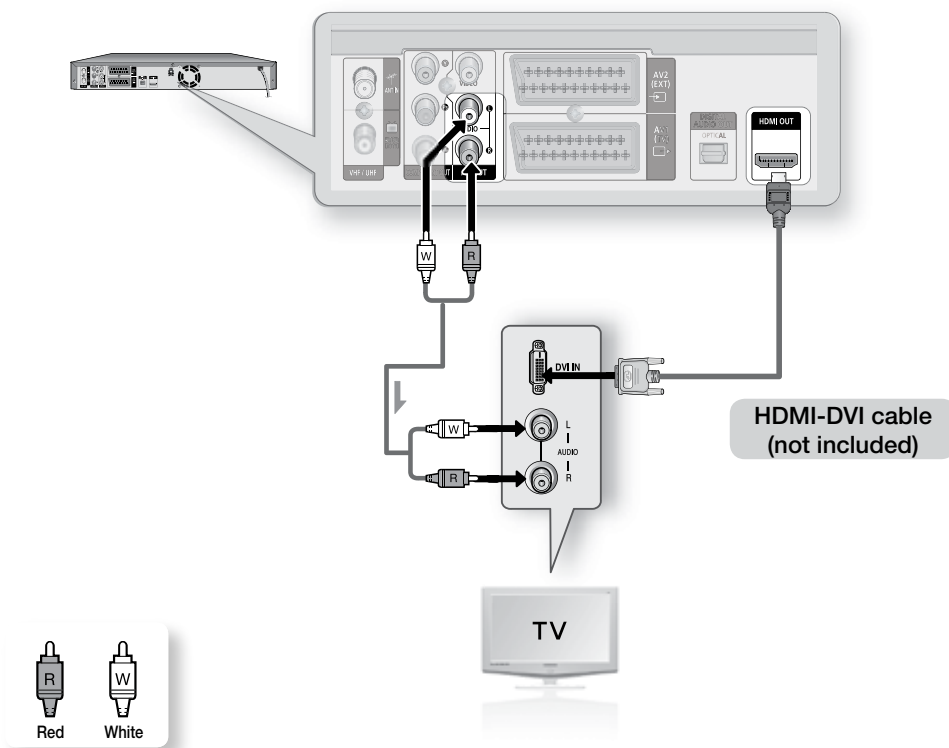


- If the HDD & DVD Recorder is connected to your TV in HDMI 1080p output mode, you must use High speed(category2) HDMI cable.

Connecting & Setting up

Case 2 : Connecting to a TV with DVI Jack

- Using a DVI Adapter cable (not supplied), connect the HDMI OUT jack on the rear of the HDD & DVD Recorder to the DVI IN jack of your TV.
- Using the audio cables, connect the AUDIO (red and white) OUT jacks on the rear of the HDD & DVD Recorder to the AUDIO (red and white) IN jacks of your TV. Turn on the HDD & DVD Recorder and TV.
- Press the input selector on your TV remote control until the DVI signal from the HDD & DVD Recorder appears on your TV screen.



- ! ■ To use an HDMI cable (not supplied), make the Audio/Video connection before plugging in the power cord or after finishing the "Plug & Play Setup." Do not connect the HDMI cable while the "Plug & Play Setup" is progressing.
- Progressive scan automatically activates when HDMI is connected.
- If TV/HDMI Receiver does not support DTS, Audio output is not available when you play a disc in DTS format.
- You can switch from the HDMI output to other output only in stop mode.
- If you use an HDMI cable to connect a Samsung TV to the HDD & DVD Recorder, you can operate the recorder using the TV remote control.
(This is only available with SAMSUNG TVs that support Anynet+(HDMI CEC).) (See pages 39~40)
- Please check the **Anynet+** logo (If your TV has an **Anynet+** logo, then it supports Anynet+ function.)



HDMI (High Definition Multimedia Interface)

HDMI is an interface to enable the digital transmission of video and audio data with just a single connector. Since HDMI is based on DVI, it is completely compatible with DVI. The only difference between HDMI and DVI is that HDMI supports multi-channel audio. Using HDMI, the HDD & DVD Recorder transmits a digital video and audio signal and displays a vivid picture on a TV having an HDMI input jack.

■ **HDMI connection description**

HDMI connector - Both uncompressed video data and digital audio data (LPCM or Bit Stream data).

- Though the HDD & DVD Recorder uses a HDMI cable (not supplied), the HDD & DVD Recorder outputs only a pure digital signal to the TV.

- If TV does not support HDCP (High -bandwidth Digital Content Protection), snow noise appears on the screen.

■ **Why does Samsung use HDMI?**

Analogue TVs require an analogue video/audio signal. However, when playing a DVD, the data transmitted to a TV is digital. Therefore either a digital-to-analogue converter (in the HDD & DVD Recorder) or an analogue-to-digital converter (in the TV) is required. During this conversion, the picture quality is degraded due to noise and signal loss. HDMI technology is superior because it requires no D/A conversion and is a pure digital signal from the HDD & DVD Recorder to your TV.

■ **What is the HDCP?**

HDCP (High-bandwidth Digital Content Protection) is a system for protecting DVD content outputted via HDMI from being copied. It provides a secure digital link between a video source (PC, DVD, etc) and a display device (TV, projector, etc). Content is encrypted at the source device to prevent unauthorised copies from being made.

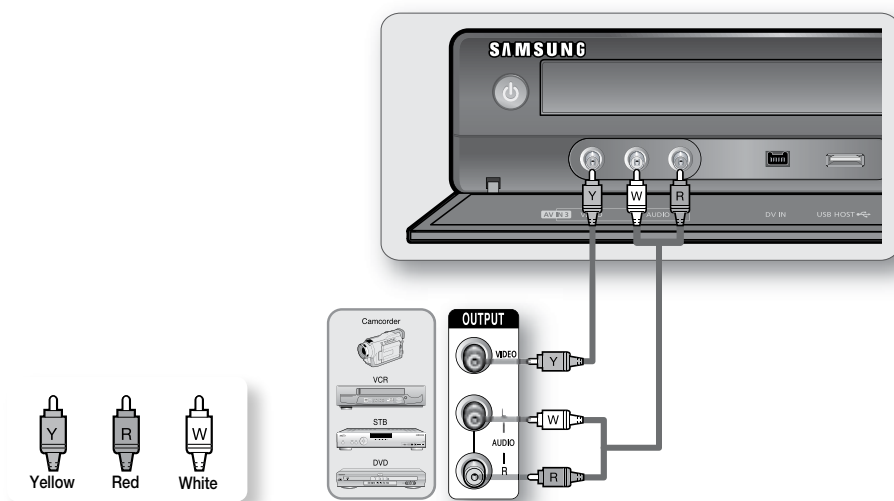
CONNECTING TO AV IN 3, DV INPUT JACK

This allows you to connect your HDD & DVD Recorder to other external devices and view or record their outputs.

- **Case 1** : Connecting a VCR, Set-Top Box(STB), DVD player or Camcorder to the AV IN 3 jacks
- **Case 2** : Connecting a DV Device to the DV IN jack

Case 1 : Connecting a VCR, Set-Top Box(STB), DVD player or Camcorder to the AV IN 3 jacks

Connecting a VCR or external device to AV IN 3 jacks of the HDD & DVD Recorder. You can record from connected equipment (VCR, STB, DVD player or Camcorder).

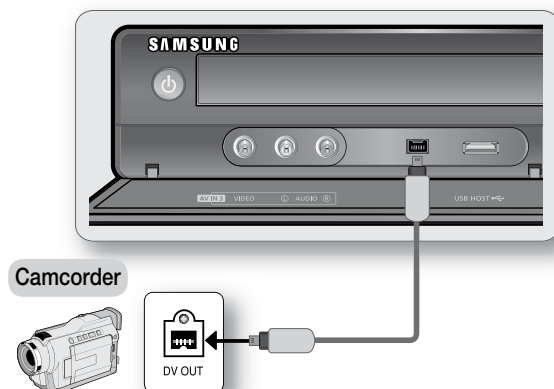


- AV IN 3 selection will be automatically done.
If the input is not selected automatically, use **SOURCE** button to select proper input.
- Copy protected content cannot be recorded.

Connecting & Setting up

Case 2 : Connecting a Camcorder to the DV IN jack

If your digital camcorder has a DV output jack, connect it to the DV input jack of your HDD & DVD Recorder.

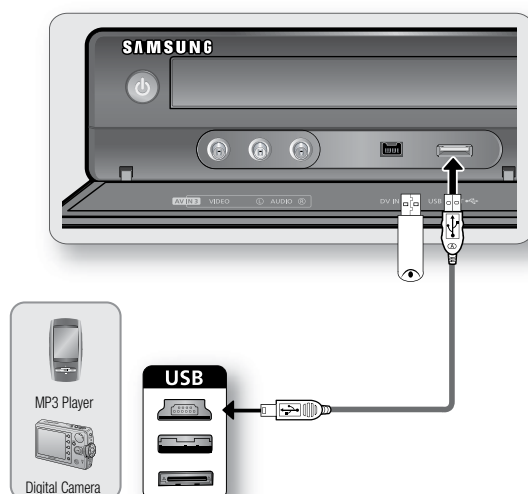


- If the input is not selected automatically, use **SOURCE** button to select proper input.

CONNECTING TO USB DEVICES

This allows you to connect your HDD & DVD RECORDER to USB devices.

Connecting a USB memory, MP3 player, Digital Camera to the USB HOST.



- Disconnecting the USB cable during the data transfer will stop the communication and may damage data stored in the memory.
- When data communication is disrupted due to static electricity, magnetic field or other reason, restart the programme or try to disconnect / connect the USB Cable again.

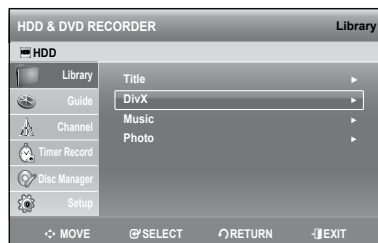
system setup

ON-SCREEN MENU NAVIGATION

The on-screen menus allow you to enable or disable various functions on your HDD & DVD Recorder.

Press the MENU button to open the on-screen menu and then use the following buttons to navigate through the on screen menus.

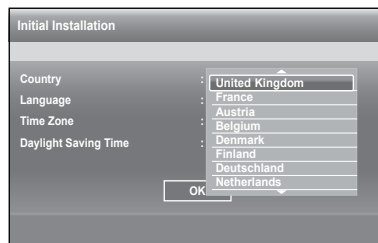
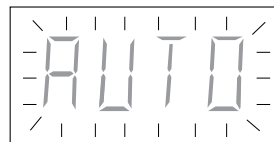
1. **▲▼, ◀▶** buttons
Press these buttons on the remote control to move the selection bar ▲▼, ◀▶ to cycle through the menu options.
2. **OK** button
Press this button on the remote control to confirm any new settings.
3. **RETURN** button
Press this button on the remote control to return to the Previous menu screen displayed or to exit the on-screen menu.
4. **EXIT** button
Press this button to exit the on-screen menu.



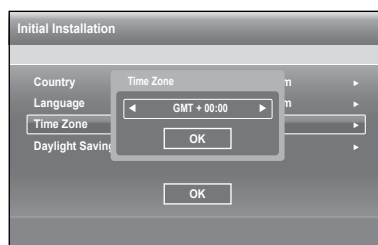
PLUG & PLAY SETUP

Your HDD & DVD Recorder will automatically set itself up when it is plugged in for the first time. TV stations and clock will be stored in memory. The process takes a few minutes. Your HDD & DVD Recorder will then be ready for use.

1. Connect the RF cable as indicated on page 22.
(Connecting Your HDD & DVD Recorder to the TV Using the RF Cable and scart cable.)
To use HDMI cable (not supplied), make the Audio/Video connection before plugging in the power cord or after finishing the "Plug & Play Setup" Do not connect the HDMI cable while the "Plug & Play Setup" is progressing.
2. Plug the HDD & DVD Recorder into the mains. "AUTO" in the front panel display flickers.
3. Press the **OK** or **▶** button, then **Country** option display.
Press the **▲▼** buttons to select the desired country option, then press the **OK** button.
4. Press the **OK** or **▶** button, then **Language** option display.
Press the **▲▼** buttons to select the desired language option, then press the **OK** button.
5. Press the **OK** or **▶** button, then **Time Zone** option display.
Press the **◀▶** buttons to select the desired time zone option.
Press the **▲▼** buttons to select **OK**, then press the **OK** button.



- If you select a country, the time zone will be automatically set accordingly.



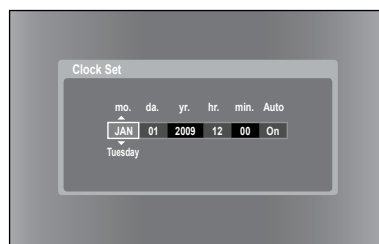
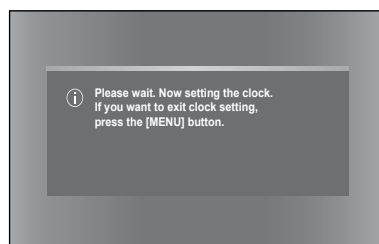
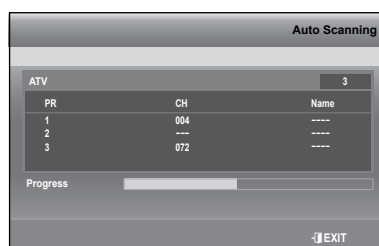
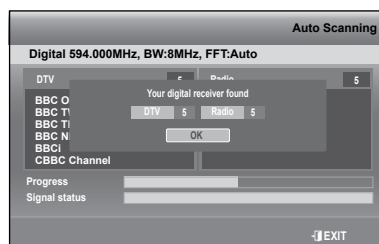
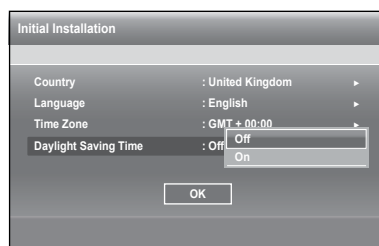
System setup

6. Press the **OK** or **▶** button, then **Daylight Saving Time** option display.
Press the **▲▼** buttons to select On or Off, then press the **OK** button.
7. Press the **▼** button to select **OK**, then press the **OK** button.
Digital auto scan will be started.
8. After auto channel scan is completed, the message "Your digital receiver found" will be displayed.
9. Press the **OK** button.
Analogue auto scan will be started.
10. After auto channel scan is completed, auto clock setting will be started automatically in 10 seconds. If you want to start auto clock setting immediately, press **OK** button.
11. Wait until current date and time are displayed automatically.
If you want to exit auto clock setting, press **MENU** button.



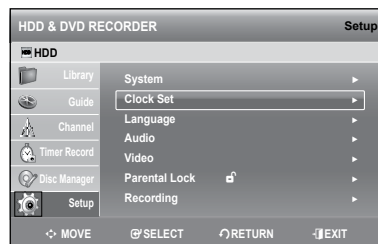
- Now your HDD & DVD Recorder is ready for use. If you wish to retune, you can by using the "Channel Set - Manual Setup (Analogue)" menu. (See pages 36~37)
- Auto setup function can be performed by pressing **STOP** (■) on the unit continuously for 5 seconds or more during power off with no disc inserted.

12. Check the date and time.
 - If it is Correct, press **OK** button then the date and time will be saved. If you don't press the **OK** button, the date and time will be saved automatically after 5 seconds.
 - If it is Incorrect, input correct **Month, Day, Year, Hour** or **Minute** using **▲▼**, **◀▶** buttons or number buttons. Press **OK** button then the date and time will be saved. When you need to change clock setting, you can set up it manually.



CLOCK SET

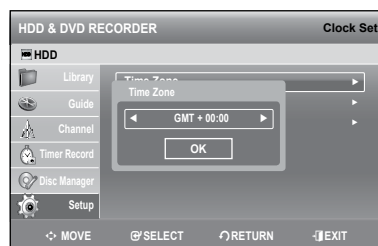
1. With the unit in Stop mode, press the **MENU** button.
2. Press the **▲▼** buttons to select **Setup**, then press the **OK** or **▶** button.
3. Press the **▲▼** buttons to select **Clock Set**, then press the **OK** or **▶** button.



Time Zone

To setup, follow steps 1~3.

4. Press the **▲▼** buttons to select **Time Zone**, then press the **OK** or **▶** button.
Select the time zone of your area using the **◀▶** buttons, then select **OK** using **▲▼** button.



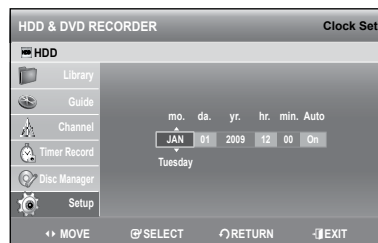
❖ GMT (Greenwich Mean Time) Table

| Country | GMT | City |
|---|-----------|--|
| United Kingdom, Portugal | GMT+00:00 | Dublin, Edinburgh, London, Lisbon, Casablanca |
| France, Austria, Belgium, Denmark, Germany, Netherlands, Italy, Norway, Spain, Sweden, Switzerland, Hungary, Czech Republic | GMT+01:00 | Berlin, Stockholm, Rome, Vienna, Paris, Madrid, Prague, Warsaw, Brussels, Copenhagen, Oslo, Bern, Budapest, Warsaw, Prague |
| Finland, Turkey, Greece, Eastern Europe | GMT+02:00 | Athens, Helsinki, Istanbul, Cairo, Pretoria, Israel |

Manual clock set

To setup, follow steps 1~3.

4. Press the **▲▼** buttons to select **Manual Clock Set**, then press the **OK** or **▶** button.
Use the **▲▼◀▶** buttons to input Time, Date or Year.
Use number buttons to input clock data directly.
5. Press the **OK** button, then the date and time will be saved.
If you don't press the **OK** button, it will not be saved.



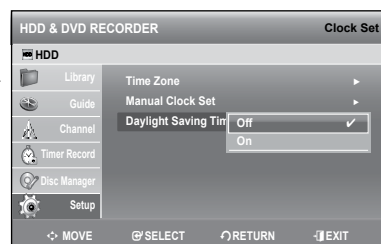
- You must have the RF cable connected to set the Auto Clock. (See page 22)
- The DVD Recorder automatically sets the clock according to the time signal broadcast between the channels PR1 to PR5. If there is no clock in the analogue broadcast, the clock will be searched automatically in the DVB-T. If you do not need the Auto clock set function, select **Off**.
- If there is a difference between the time information of analogue and the one of digital, you may not be available to view the contents of DVB-T normally.

System setup

Daylight Saving Time

To setup, follow steps 1~3 on page 35.

- Press the ▲▼ buttons to select **Daylight Saving Time**, then press **OK** or ► button.
- Select the **Off** or **On** using the ▲▼ buttons, then press the **OK** or ► button.



CHANNEL SET

This menu consist of 5 sub-menus (Channel List (Digital), Favourite List (Digital), Auto Scanning, Manual Scanning (Digital), Manual Setup (Analogue).

- With the unit in Stop mode, press the **MENU** button.
- Press the ▲▼ buttons to select **Channel**, then press the **OK** or ► button.

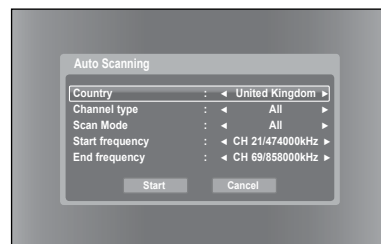
Auto Scanning

This function will automatically store any channels that can be found through the RF connection.

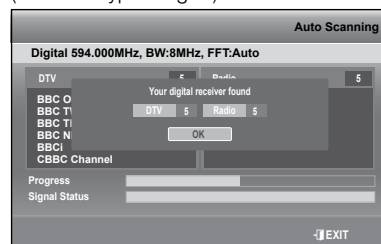
To setup, follow steps 1~2 on page 36.

- Press the ▲▼ buttons to select **Auto Scanning**, then press **OK** or ► button.
The message "Auto Scanning will remove all channels. Press [OK] to continue,[RETURN] to exit." will be displayed.

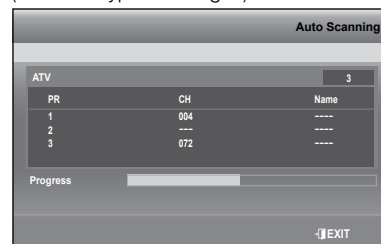
- Press the **OK** button, then press Press the ▲▼◀▶ buttons to select **desired options**.
 - Country** : Press the ◀▶ buttons to select desired country.
 - Channel type** : Press the ◀▶ buttons to select Digital, Analogue or All. (If you select Analogue, you can not select the Scan Mode, Start frequency and End frequency.)
 - Scan Mode** : - Only Free : Receives signals except for the scrambled signal.
- All : Receives signals including the scrambled signal.
 - Start frequency/End frequency** : It is changed automatically when the country is selected.
- Press the ▲▼ button to select **Start**, then press **OK** button.
Auto Scan will be started.



(Channel Type : Digital)



(Channel Type : Analogue)



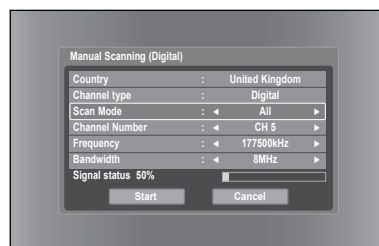
- You can select **RADIO** mode by pressing the **TV/RADIO** button on the remote control. This button is used to toggle between the TV and RADIO modes.

Manual Scanning (Digital)

To tune-in new channels, the HDD & DVD Recorder has been provided with the option Manual Scan where the channel data can be entered by user.

To setup, follow steps 1~2 on page 36.

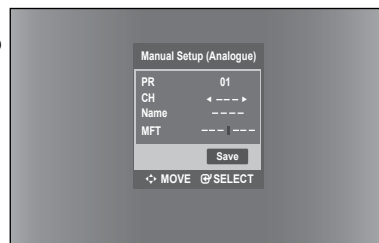
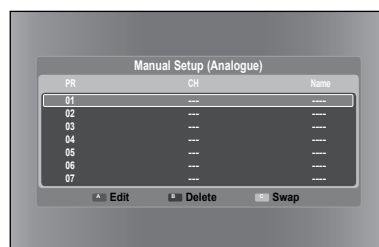
3. Press the ▲▼ buttons to select **Manual Scanning (Digital)**, then press **OK** or ► button.
4. Select the **Channel Number** which you want to find using ◀▶ buttons.
Select **Frequency** and input the Frequency of the channel you want to find by pressing the number button.
Select **Bandwidth** which you want to find using ◀▶ buttons.
When the valid frequency is input, the bandwidth is selected automatically. You can select the value of 6,7 or 8 MHz. After select option. Press **OK** button to start the scanning process.



Manual Setup (Analogue)

To setup, follow steps 1~2 on page 36.

3. Press the ▲▼ buttons to select **Manual Setup (Analogue)**, then press **OK** or ► button.
4. Press the ▲▼ buttons to select a **PR(programme)** you wish to edit, delete, or swap, then press the **COLOUR** button.
Select **Edit**, **Delete** or **Swap**.
 - **Edit- RED(A) button** : You can add or edit programme (PR) information. After you have changed the PR information (**CH**, **Name**, **MFT**), select **Save**, then press the **OK** button.
 - **CH** : Tune the channel using ◀▶ buttons.
 - **Name** : Display station name automatically detected in broadcasting signal. If not detected, you can edit name by using ▲▼◀▶ buttons.
 - **MFT (Manual Frequency Tuning)** :
You can tune the channel frequency manually using ◀▶ buttons.
 - **Delete GREEN(B) button** : The selected programme will be removed.
 - **Swap YELLOW(C) button** : You can swap the channel information of two programmes (PR). For example, if you wish to swap PR2 and PR5, select swap at PR2, then press the **OK** button at PR5.



System setup

Channel List (Digital)

This function is possible in DVB-T mode only.

This function is used to edit the favourite channel list or delete the channel.

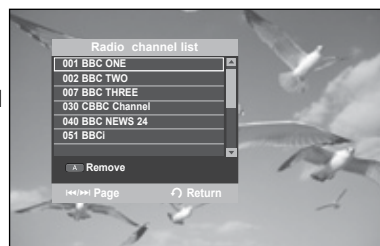
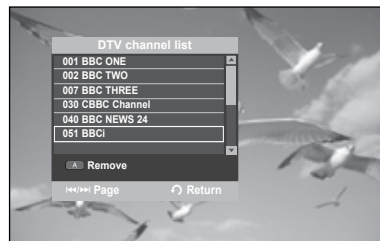
To setup, follow steps 1~2 on page 36.

3. Press the ▲▼ buttons to select **Channel List (Digital)**, then press **OK** or ► button.

4. To delete a channel from the Channel List (Digital), press the **RED(A)** button. Press the **OK** button to watch that channel.



- Press **OK** button in the DVB-T view to display the Channel List (Digital).
- You can select RADIO mode by pressing the **TV/RADIO** button on the remote control. This button is used to toggle between the TV and RADIO modes.
- If a new channel is added or a lesser number of channels are received than the TV channels, run Auto Scanning again.



Favourite List (Digital)

This function is possible in DVB-T mode only.

You can immediately register the present channel to the Digital Favourite Channel list.

To setup, follow steps 1~2 on page 36.

3. Press the ▲▼ buttons to select **Favourite List (Digital)**, then press **OK** or ► button.

4. To add the current channel the Digital Favourite channels, press the **YELLOW(C)** button.

To delete a favourite channel from the Digital Favourite channel list, press the **RED(A)** button.

Press the **OK** button to watch that channel.



SETTING UP THE SYSTEM OPTIONS

This function allows you to setup the system setting.

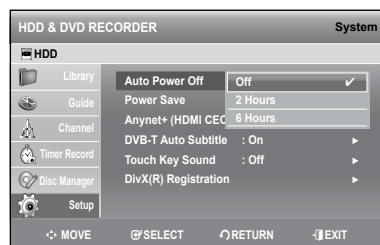
1. With the unit in Stop mode, press the **MENU** button.
2. Press the **▲▼** buttons to select **Setup**, then press the **OK** or **▶** button.
3. Press the **▲▼** buttons to select **System**, then press the **OK** or **▶** button.
4. Press the **▲▼** buttons to select the desired system option, then press the **OK** or **▶** button.
5. Press the **▲▼** buttons to select the desired item, then press the **OK** or **▶** button.



Auto Power Off Setting

This feature automatically turns off your HDD & DVD Recorder, if you do not press any button for the selected time.

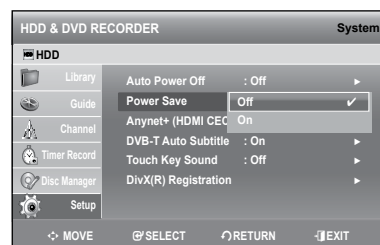
1. Press the **▲▼** buttons to select **Auto Power Off**, then press the **OK** or **▶** button.
2. Press the **▲▼** buttons to select the desired item, then press the **OK** or **▶** button.
 - **Off** : Auto power off is disabled.
 - **2 Hours** : HDD & DVD Recorder will automatically turn off for 2 hours after the last button is pressed.
 - **6 Hours** : HDD & DVD Recorder will automatically turn off for 6 hours after the last button is pressed.
 - If the turn off time set with the Auto Power off function is reached during playback or recording, the device will operate until the playback or recording is finished.



- If you off and on the HDD & DVD Recorder, the option will be returned to default.

Power Save Setting

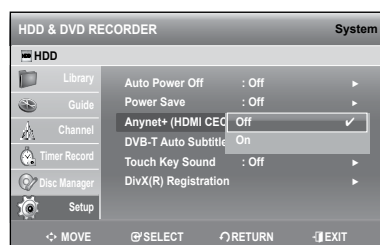
- **On**: If it is set to On and you turn off the HDD & DVD recorder, the recorder enters the Power Save and the front panel display goes off.
- **Off** : Does not set to Power Save. Normally select OFF mode.



Anynet+ (HDMI CEC)

Anynet+ is a function that can be used to operate the recorder using a Samsung TV remote control, by connecting the HDD & DVD Recorder to a SAMSUNG TV using an HDMI Cable. (See pages 31~32) (This is only available with SAMSUNG TVs that support Anynet+.)

1. Press the **▲▼** buttons to select **Anynet+ (HDMI CEC)**, then press the **OK** or **▶** button. **Anynet+ (HDMI CEC)** items will be displayed.
2. Press the **▲▼** buttons to select **On**, then press the **OK** or **▶** button.


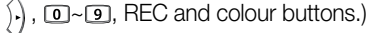


System setup



For using Anynet+ (HDMI CEC)

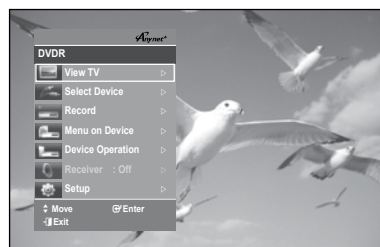
1. Connect the HDD & DVD Recorder to a Samsung TV with an HDMI cable. (See pages 29~30)
2. Set the Anynet+ (HDMI CEC) to "On" on your HDD & DVD Recorder. (See page 39)
3. Set the Anynet+ function on your TV.
(See the TV instruction manual for more information.)

- You can operate the HDD & DVD Recorder by using TV remote control.

(TV buttons that can be used to control the HDD & DVD Recorder : , )

- When you press Anynet+ button on the TV's remote control, the **< TV Menu >** OSD to the left will appear.

- **Select Device** : Use this option to select device.
- **Record** : Use this option to start recording or stop recording.
- **Menu on Device** : Same as **MENU** () button on the HDD & DVD Recorder remote control.
- **Device Operation** : Same as **INFO** () button on the HDD & DVD Recorder remote control.

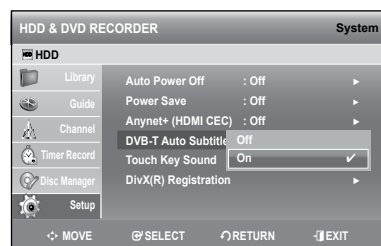


- By pressing the **Power On** button of the recorder while watching TV, the TV screen will change to the play screen.
- If you power on a HDD & DVD Recorder when the TV power is off, the TV will power On.
- If you turn the TV off, the HDD & DVD Recorder will power off automatically. (When the HDD & DVD Recorder is recording, it can't be powered off.)
- If you change the HDMI to other sources (Composite, Component, RF... etc) in TV while playing the DVD disc, the HDD & DVD Recorder will stop playing. But the HDD & DVD Recorder may keep the DVD disc Recording.

DVB-T Auto Subtitle

- **On** : The subtitle is shown automatically when watching the DVB-T.
- **Off** : The function is cancelled.

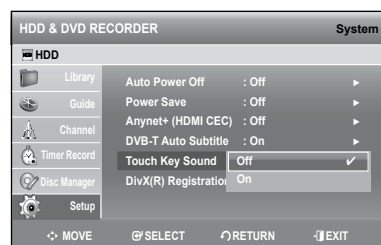
- It is available when watching a programme that has subtitles.



Setting the Touch Key Sound On / Off

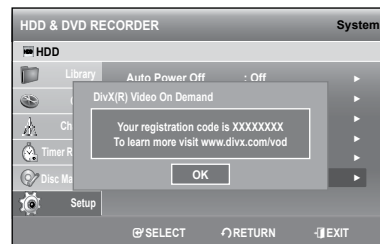
To setup, follow steps 1 through 3 above.

4. Press the **▲▼** buttons to select **Touch Key Sound**, then press the **OK** or **▶** button.
5. Press the **▲▼** buttons to select **On** or **Off**, then press the **OK** or **▶** button.
6. Press the **MENU** button to exit the setup menu.



DivX(R) Registration

Please use the Registration code to register this HDD & DVD Recorder with the DivX(R) Video On Demand format. For more information, visit www.divx.com/vod




SETTING UP THE LANGUAGE OPTIONS

If you set the language options, in advance, they will come up automatically every time you watch a movie.

1. With the unit in Stop mode, press the **MENU** button.
2. Press the **▲▼** buttons to select **Setup**, then press the **OK** or **▶** button.
3. Press the **▲▼** buttons to select **Language**, then press the **OK** or **▶** button.
Language setup menu will be displayed.
4. Press the **▲▼** buttons to select the desired language option, press the **OK** or **▶** button.



- **DVD Audio** : For the disc audio language.
 - **DVB-T Audio** : For the current broadcasting Programme provides audio.
 - **DVD Subtitle** : For the disc subtitles.
 - **DVB-T Subtitle** : For the current broadcasting Programme provides subtitles.
 - **Disc Menu** : For the disc menu contained on the disc
 - **Menu** : For the on-screen menu of your HDD & DVD Recorder.
 - Automatic : Sets the HDD&DVD recorder's menu language to the TV menu language.
 - How to use Automatic?
 1. The TV that you want to connect to should support the Anynet+ feature.
 2. Use the HDMI cable to connect the HDD&DVD recorder to the TV. (See pages 31~32)
 3. If the Anynet+ feature of the HDD & DVD recorder is set to "On" (see page 41) and the menu language is set to "Automatic", then the menu language will be set to the same as that of the TV.
 4. If the TV menu language in Automatic mode is not supported by the recorder, the recorder's menu language will be set to the default.
5. Press the **▲▼** buttons to select the desired language, then press the **OK** or **▶** button.
-  ■ If the selected language is not recorded on the disc, the original pre-recorded language is selected.
- The selected language will only appear if it is supported on the disc and DVB-T.
- During the playback, press the **SUBTITLE** button to select DVD subtitle. Because the default of DVD subtitle is off, press the **▲▼** button to select the desired subtitle.

System setup

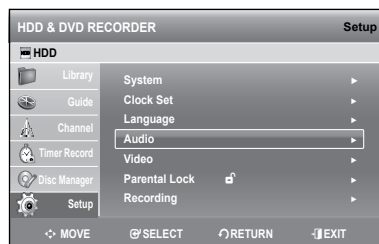
SETTING UP THE AUDIO OPTIONS

You can connect the HDD & DVD Recorder to an external amp or Home theatre.

Allows you to setup the Audio device and sound status depending on the audio system in use.

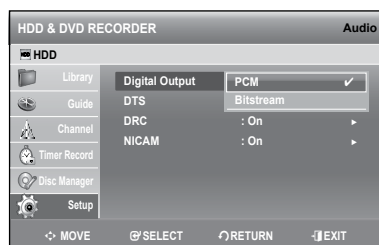
You can also set NICAM mode.

1. With the unit in Stop mode, press the **MENU** button.
2. Press the **▲▼** buttons to select **Setup**, then press the **OK** or **▶** button.
3. Press the **▲▼** buttons to select **Audio**, then press the **OK** or **▶** button.
4. Press the **▲▼** buttons to select the desired audio option, then press the **OK** or **▶** button.
5. Press the **▲▼** buttons to select the desired item, then press the **OK** or **▶** button.



Digital Output

- **PCM** : Select this when your equipment is not Dolby Digital (or MPEG-2) compatible.
- **Bitstream** : Outputs Dolby Digital (or MPEG-2) audio as bitstream. Select this when your AV receiver or AV amplifier has a Dolby Digital (or MPEG-2) Decoder.



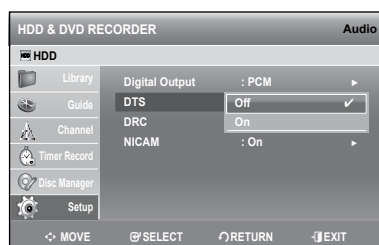
- Digital output setting is equally applied to both Dolby Digital and MPEG-2 audio. LPCM sound track is always outputted as PCM. It has no relation with Digital Output setting.
- Be sure to select the correct Digital Output or you will hear no sound or a loud noise.

DTS

- **Off** : Doesn't output DTS signal. Select this when your AV receiver (or AV amplifier) does not have DTS decoder.
- **On** : Outputs DTS Bitstream via digital output when you play DTS track. Select this only when your AV receiver (or AV amplifier) have DTS decoder.



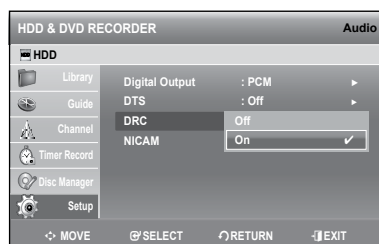
- When DTS soundtrack is played, sound does not output from AV Audio Output.



DRC

This is only active when a Dolby Digital signal is detected.

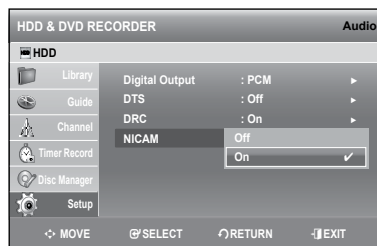
- **On** : When Movie soundtracks are played at low volume or from smaller speakers, the system can apply appropriate compression to make low-level content more intelligible and prevent dramatic passages from getting too loud.
- **Off** : You can enjoy the movie with the standard Dynamic Range.



NICAM

NICAM programmes are divided into 3 types. NICAM Stereo, NICAM Mono and Bilingual (transmission in another language). NICAM programmes are always accompanied by a standard mono sound broadcast and you can select the desired sound by setting NICAM on or off.

- **On** : NICAM mode
- **Off** : Only set at this position to record the standard mono sound during a NICAM broadcast if the stereo sound is distorted due to inferior reception conditions.

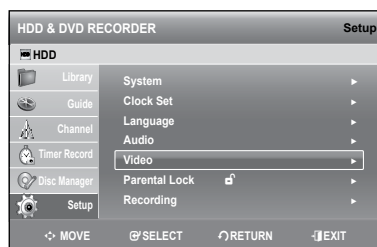


SETTING UP THE VIDEO OPTIONS

This function allows you to setup the video setting.

This function depends on disc type. It may not work for some disc types.

1. With the unit in Stop mode, press the **MENU** button.
2. Press the **▲▼** buttons to select **Setup**, then press the **OK** or **▶** button.
3. Press the **▲▼** buttons to select **Video**, then press the **OK** or **▶** button.
Video setup menu will be displayed.
4. Press the **▲▼** buttons to select the desired video option, then press the **OK** or **▶** button.
5. Press the **▲▼** buttons to select the desired item, then press the **OK** or **▶** button.



TV Aspect

You may want to adjust the screen setting Depending on the type of television you have. (aspect ratio)

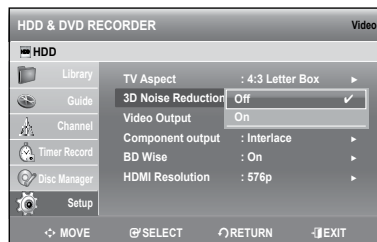
- **4:3 Letter Box** : Select when you want to see the total 16:9 ratio screen DVD supplies, even though you have a TV with a 4:3 ratio screen. Black bars will appear at the top and bottom of the screen.



- **4:3 Pan-Scan** : Select this for conventional size TV when you want to see the central portion of the 16:9 screen. (Extreme left and right side of movie picture will be cut off.)
- **16:9 Wide** : You can view the full 16:9 picture on your wide screen TV.

3D Noise Reduction (motion adaptive noise reduction)

- **Off** : Normal
- **On** : Provides a clear picture through noise reduction (for recording).

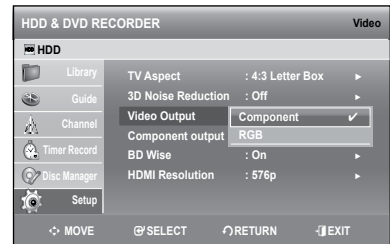


System setup

Video Output

You can enjoy high quality image through RGB or Component video connections. RGB video output is available connecting scart jack (AV1) and component video output is available connecting component (Y, P_B, P_R) jack. Only one of these signals can be selected at one time.

- Component
- RGB



In Component mode, you can set video output to Progressive or Interlace, see page 44.
When the HDMI cable (not supplied) is not connected, available video output jacks are as follow.

Available Video Output Jack

| Setting mode | | Component mode | RGB MODE |
|--|-----------|----------------|----------|
| Output jack | | | |
| Component Output (Y, P _B , P _R) | | 0 | X |
| AV1 Scart | R, G, B | X | 0 |
| | Composite | 0 | X |
| Composite Video out | | 0 | 0 |



- When the HDMI cable(not supplied) is connected, RGB output does not operate. Video output is set to Component.

COMPONENT OUTPUT (PROGRESSIVE SCAN)

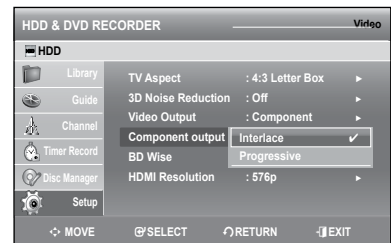
This function is available when video output is component. This setting enables you to select a desired progressive mode. To view 'Progressive scan mode', first connect the component cable. (See page 27) Be sure the Component cables are connected properly.

• Progressive

The message "Do you want to maintain progressive mode?
Reverting in 10 seconds." will be displayed.
Select "Yes" to revert progressive mode.

• Interlace

The message "Do you want to maintain interlace mode? Reverting
in 10 seconds." will be displayed.
Select "Yes" to revert interlace mode.



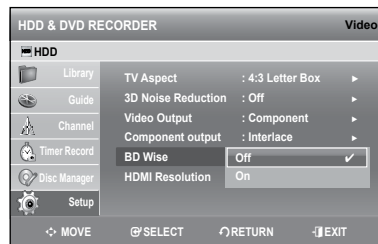
- When the HDMI cable (not supplied) is connected, this screen is not displayed.

BD Wise (Only Samsung products)

BD Wise is Samsung's latest inter-connectivity feature.

When you connect Samsung products with BD-Wise to each other via HDMI, the optimum resolution will be set automatically.

- **On** : The original resolution of the DVD disc will be output to the TV directly.
- **Off** : The output resolution will be fixed according to the Resolution previously set, regardless of the resolution of the disc.

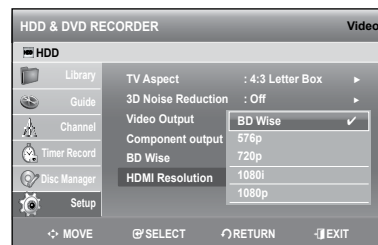


- If you want to change the resolution in BD Wise, you must set BD Wise to Off in advance.
- If you set off the BD Wise, the resolution of the connected TV will be adjusted to its maximum resolution automatically.
- If the HDD & DVD Recorder is connected to a device that does not support BD Wise, you can not use BD Wise function.
- For a proper operation of BD Wise, set each **BD Wise** menu of the player and the TV to On respectively.

HDMI RESOLUTION

This setting is used when the unit is connected by HDMI with Display devices (TV, projector, etc).

- **BD Wise** : BD Wise : Automatically selects the optimal resolution according to the TV that supports BD Wise. (The BD Wise menu item appears only if BD Wise is set to On.)
- **576p** 720 x 576
- **720p** : 1280 x 720
- **1080i** : 1920 x 1080
- **1080p** : 1920 x 1080



Output selection

- Connect the HDD & DVD Recorder to your TV via HDMI.
Set your TV's input to HDMI.



- The BD Wise menu item appears only if BD Wise is set to On.
BD wise function is enabled only if BD Wise-compliant Samsung Products are connected with each other using the HDMI cable.
- Progressive scan automatically activates when HDMI is connected.
- Consult your TV User's Manual to find out if your TV supports Progressive Scan. If Progressive Scan is supported, follow the TV User's Manual regarding Progressive Scan settings in the TV's menu system.
- If Video Output is set incorrectly, the screen may be blocked.
- The resolutions available for HDMI output depend on the connected TV or projector. For details, see the user's manual of your TV or projector.
- When the resolution is changed it may take a few seconds for a normal image to appear.

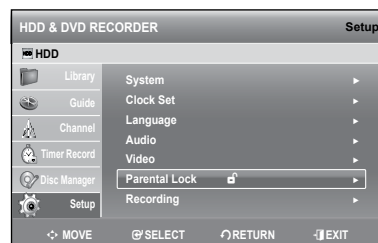
System setup

SETTING UP THE PARENTAL LOCK

The Parental Lock function works in conjunction with DVDs and DVB-T that have been assigned a rating which helps you control the types of DVDs that your family watches. There are up to 8 rating levels on a disc.



1. With the unit in Stop mode, press the **MENU** button.
2. Press the **▲▼** buttons to select **Setup**, then press the **OK** or **▶** button.
3. Press the **▲▼** buttons to select **Parental Lock**, then press the **OK** or **▶** button.
When you operate your HDD & DVD Recorder for the first time, the “Create the Password” message will be displayed.
4. Enter the 4-digit password using the number buttons on the remote control.
The “Confirm the password” message will be displayed. Enter your password again.

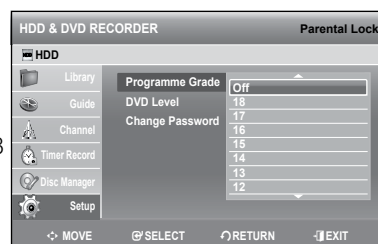


If you forgot your password

1. Switch the DVD mode and remove the disc.
2. Press and hold the **PLAY/PAUSE (▶||)** button on the front panel for 10 seconds or more.

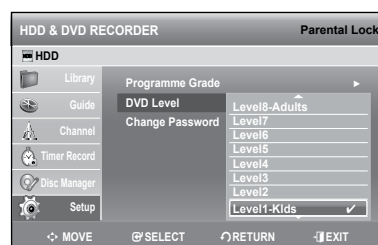
Setting the Programme Grade

1. Press the **▲▼** buttons to select **Programme Grade**, then press the **OK** or **▶** button.
2. Press the **▲▼** buttons to select the programme grade you want, then press the **OK** or **▶** button.
For example, if you select up to 15, DVB-T that contain 16, 17, 18 will not display. A larger number indicates that the programme is intended for adult use only.



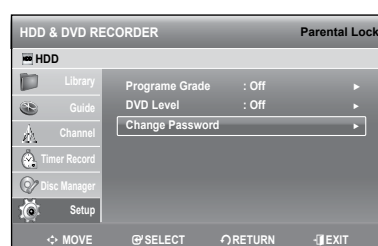
Setting the DVD Level

1. Press the **▲▼** buttons to select **DVD Level**, then press the **OK** or **▶** button.
2. Press the **▲▼** buttons to select the **DVD Level** you want, then press the **OK** or **▶** button.
For example, if you select up to 6, discs that contain 7, 8 will not play.
A larger number indicates that the programme is intended for adult use only.



Changing the Password

1. Press the **▲▼** buttons to select **Change Password**, then press the **OK** or **▶** button.
2. Enter the 4-digit password using the number buttons on the remote control. The “Confirm the password” message will be displayed.
3. Enter your password again using the number buttons on the remote control.



SETTING UP THE RECORDING OPTIONS

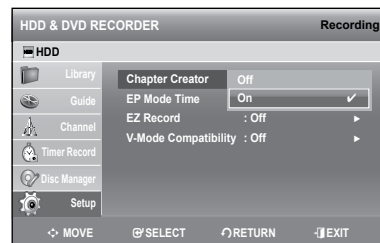
Automatic Chapter Creator



(V-mode)

A DVD-Video consists of 'Titles' and 'Chapters'. When you record one programme, it makes one Title. If you use this function, the Title will be divided into Chapters.

1. With the unit in Stop mode, press the **MENU** button.
2. Press the **▲▼** buttons to select **Setup**, then press the **OK** or **▶** button.
3. Press the **▲▼** buttons to select **Recording**, then press the **OK** or **▶** button.
4. Press the **▲▼** buttons to select **Chapter Creator**, then press the **OK** or **▶** button.
5. Press the **▲▼** buttons to select **Off** or **On**, then press the **OK** or **▶** button.
 - **Off** : Select if you do not want to use Automatic Chapter Creator.
 - **On** : Select this option to use the Automatic Chapter Creator feature.



Press the **EXIT** button to exit the menu.

6. Press the **REC** button to start recording.
(See page 71 about how to set recording speed)
The message "Do you want to create the chapter menu after this recording?" is displayed.
7. Press the **◀▶** buttons to select **OK**, then press the **OK** button.
 - A new chapter is created according to the selected recording mode. A chapter will be about 5 minutes long in XP and SP, and about 15 minutes long in LP and EP mode.
8. Press the **STOP** button to stop recording.
9. To display the created titles, finalise the disc (See page 102) and then press the **TITLE MENU** button. The title menu will be displayed.
 - Finalising is generally unnecessary when using a DVD+RW disc.
10. To display the created chapters, select the desired Title and then press the **DISC MENU** button. The chapter menu for the selected Title will be displayed.



- The Automatic Chapter Creator function does not work during Timer Recording or when you turn the power off.

EP Mode Time Setting

You can select one of four recording modes by pressing the **REC MODE** button repeatedly.

In EP(Extended Play) mode, you can set recording time to 6 or 8 hours with this setting.



System setup

EZ Record



(V-mode)

This function enables you to initialise and Finalise a disc automatically.

1. Press the **▲▼** buttons to select **EZ Record**, then press the **OK** or **▶** button.
2. Press the **▲▼** buttons to select **On**, then press the **OK** or **▶** button.
Press the **EXIT** button to exit the menu.
3. Insert a disc.
If the disc is new, It is initialised to V mode automatically.
(DVD-RW only)
4. Press the **REC** button.
5. EZ Record function will automatically Finalise the disc under the following conditions.
 - When you press the **OPEN/CLOSE** button on your HDD & DVD Recorder after recording on at least 70% of the disc.
The tray will open after the disc has been finalised.
 - The above feature is available only when a DVD-RW(V), DVD+R or DVD-R disc is inserted.

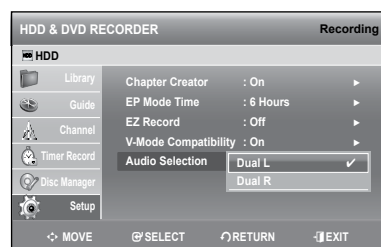
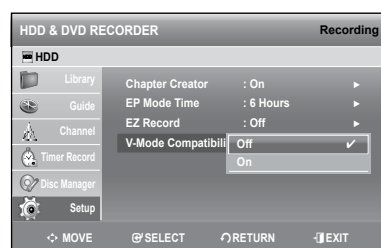
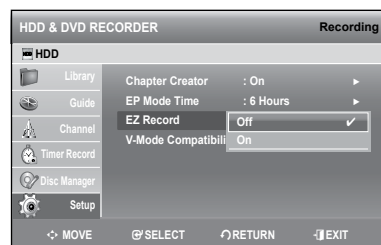


- If you insert a new DVD-RW disc, It is initialised to V mode automatically.
- If you insert a new DVD+RW disc, it will be formatted automatically.
- If you select off, you must initialise (see page 70) and finalise the disc manually in the Disc Manager menu. (see page 102)
- The length of Recording is different according to recording mode. (see page 71)

V-Mode Compatibility

This feature is about the setup for selecting audio when recording the Dual STEREO (Multi-audio) broadcasting on HDD. It does not directly affect DVD recording of a programme.

- **Off** : Both “Dual L” and “Dual R” of the multi-audio broadcasting are recorded on HDD. Titles recorded on HDD under such setup status cannot be copied to DVD+RW/±R or DVD-RW (V mode).
- **On** : Either “Dual L” or “Dual R” of the multi-audio broadcasting is recorded on HDD. Titles recorded on HDD under such setup status can be copied to DVD+RW/±R or DVD-RW (V mode) “Dual L” and “Dual R” options can be selected from “Audio Selection.”



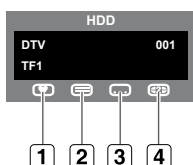
DTV functions

BASIC FUNCTIONS

Display Screen

After the television channels have been stored, you will see the following picture(banner) each time you switch channels.

Banner Elements



- | | |
|---|---------------------------------|
| 1 | Displays the favourite channel. |
| 2 | Displays the teletext. |
| 3 | Displays the subtitle. |
| 4 | Displays the multi audio. |



- The icon is displayed according to the service information of signal.
- The icon is displayed only with more than one audio type and language.
- By pressing the **i** button, you can see the detailed information.

Select Audio Track

1. Press the **AUDIO** button to see the Audio track list.
2. Press the **▲▼** buttons to select desired Audio track, then press the **OK** button.



Setting the Favourite List(Digital)

You can immediately register the present channel to the Digital Favourite Channel List.

1. Press the **FAV LIST** button while you are viewing a programme.
2. To add the current channel to the Digital Favourite channels, press the **YELLOW(C)** button.
To delete a favourite channel from the Digital Favourite channel list, press the **RED(A)** button.

– To watch the Favourite List(Digital) –

Press the **FAV LIST** button and then select the channel.

Press the **OK** button to watch that channel.

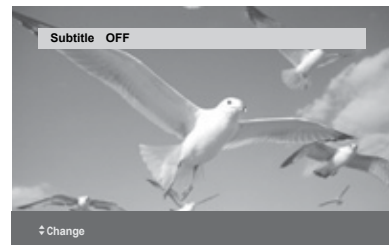


DTV functions

Changing the Subtitle Language

When the current broadcasting programme provides subtitle, press the **SUBTITLE** button . If Subtitle is available on current programme, menu bar is displayed on the upper side.

1. Press the **SUBTITLE** button.
2. Press the **▲▼** buttons to select a desired subtitle, then press the **OK** button.



Using the digital text service

When the current broadcasting programme provides teletext, press the **TEXT** button to see the teletext.

1. Press the **TEXT** button, the main menu of digital text will be displayed.
2. Press the **▲▼** or number button to select desired digital text, then press the **OK** button.



- Press the **EXIT** button to exit the main menu of digital text.



GUIDE

The electronic programme guide gives you a channel list for the channels.

1. With the unit in Stop mode, press the **MENU** button.
2. Press the **▲▼** buttons to select **Guide**, then press the **OK** or **▶** button.
 - Press the **GUIDE** button while you are viewing a programme. (DTV)
 - **RED(A) button (Timer Record)** : Setting the Timer Record.
 - **(▶▶)button** : Go to next day
 - **(◀◀)button** : Go to previous day
→ It displays programme from now to 7 days after.
 - **▲▼◀▶ button** : select the programme and station.
 - **INFO button (Information)** : View the detail information



- The contents of cell could be displayed slowly according to the broadcasting.
- If 'Daylight Saving Time' and 'GMT Time' settings are wrong, EPG Time will be incorrect.



Guide Timer Recording

Make sure that clock must be set before operating this function.
(see pages 35~36)

1. Press the **▲▼◀▶** buttons to select desired programme, then press **RED(A)** button.
2. Set timer recording option.
 - Target Media: Select the media to record HDD or DVD.
 - Series Recording: With the series recording function, you can easily and automatically record every episode of a series. Select 'On' if you want to use series recording function. The Series Recording option will be dimmed if the selected programme is not one of a series.



- You can check the setting in the scheduled List. (see pages 78~79)
- The title information is displayed in the Title List as for Guide REC.
- If Timer Rec is set, the icon is displayed in the set programme.
- Up to 12 recordings are possible including guide recording and general recording.



Playback








This section introduces basic functions of playback and playback by disc type. Read the following information before playing a disc.

REGION CODE (DVD-VIDEO ONLY)

Both the HDD & DVD Recorder and the discs are coded by region. These regional codes must match in order for the disc to play. If the codes do not match, the disc will not play. The Region Number for this HDD & DVD Recorder is described on the rear panel of the HDD & DVD Recorder.







LOGOS OF DISCS THAT CAN BE PLAYED

| | | | |
|---|---|--|---|
|  |  |  | |
| Dolby Digital | DTS | Digital Audio | |
|  |  |  |  |
| Stereo | PAL broadcast system in U.K, France, Germany, etc. | DivX | MP3 |

DISC TYPES THAT CAN BE PLAYED

| Disc Types | Disc Logo content | Recorded content | Disc Shape | Max. Playing Time |
|------------|-------------------|------------------|-------------------------------|-------------------------------|
| DVD-VIDEO | | AUDIO VIDEO | Single sided(12cm) | 240 min. |
| | | | Double sided(12cm) | 480 min. |
| | | | Single sided(8cm) | 80 min. |
| | | | Double sided(8cm) | 160 min. |
| AUDIO-CD | | AUDIO | Single sided(12cm) | 74 min. |
| | | | Single sided(8cm) | 20 min. |
| JPEG | | JPEG Image | Single sided(12cm) | - |
| | | | Single sided(8cm) | - |
| MP3 | | MP3 Audio | Single sided(12cm) | - |
| | | | Single sided(8cm) | - |
| DivX | | DivX Movie | Single sided(12cm) | - |
| | | | Single sided(8cm) | - |
| DVD-RAM | | AUDIO VIDEO | Single sided(12cm) (4.7GB) | 1 hr. (XP: Excellent Quality) |
| | | | | 2 hrs. (SP: Standard Quality) |
| | | | | 4 hrs. (LP: Long Playback) |
| | | | | 6 or 8 hrs. (EP: Extended) |
| | | | Double sided(12cm) (9.4GB) | 2 hr. (XP: Excellent Quality) |
| | | | | 4 hrs. (SP: Standard Quality) |
| | | | | 8 hrs. (LP: Long Playback) |
| | | | | 12 or 16 hrs. (EP: Extended) |

| Disc Types | Disc Logo content | Recorded content | Disc Shape | Max. Playing Time |
|----------------------------|---|---------------------|-------------------------------|--|
| DVD-RW |  | AUDIO VIDEO | 12cm (4.7GB) | 1 hr (XP: Excellent Quality) 2 hrs (SP: Standard Quality) 4 hrs (LP: Long Playback) 6 or 8 hrs (EP:Extended) |
| DVD-R |  | AUDIO VIDEO | Single Layer(12cm) (4.7GB) | 1 hr (XP: Excellent Quality) 2 hrs (SP: Standard Quality) 4 hrs (LP: Long Playback) 6 or 8 hrs (EP:Extended) |
| | | | Dual Layer(12cm) (8.5GB) | 1 hr. 50min (XP : Excellent Quality) 3 hrs. 40min (SP : Standard Quality) 7 hrs. 20min (LP : Long Playback) 11 or 14 hrs. 40min (EP : Extended) |
| | | | | |
| | | | | |
| DVD+RW |  | AUDIO VIDEO | 12cm (4.7GB) | 1 hr (XP: Excellent Quality) 2 hrs (SP: Standard Quality) 4 hrs (LP: Long Playback) 6 or 8 hrs (EP:Extended) |
| DVD+R |  | AUDIO VIDEO | Single Layer(12cm) (4.7GB) | 1 hr (XP: Excellent Quality) 2 hrs (SP: Standard Quality) 4 hrs (LP: Long Playback) 6 or 8 hrs (EP:Extended) |
| | | | Dual Layer(12cm) (8.5GB) | 1 hr. 50min (XP : Excellent Quality) 3 hrs. 40min (SP : Standard Quality) 7 hrs. 20min (LP : Long Playback) 11 or 14 hrs. 40min (EP : Extended) |
| | | | | |
| | | | | |
| CD-R/-RW DVD-RAM/-RW/-R | | JPEG MP3 DivX | - | - |

Discs that cannot be played

- DVD-Video with a region number other than “2” or “ALL”
- 3.9 GB DVD-R Disc for Authoring.
- DVD-RAM/-RW(VR mode) not recorded following the Video Recording Standard
- A DVD±R/DVD-RW(V) disc which has been recorded and not finalised in a different manufacturer’s recorder.
- DVD-ROM/PD/MV-Disc, etc
- VCD/SVCD/CVD/CD-ROM/CDV/CD-G/CD-I
- BD, HD-DVD



- This HDD & DVD Recorder can only operate with discs that are compatible with DVD-RAM Standard Version 2.0.
- Playback and/or recording may not work for some types of discs, or when specific operations, such as angle change and aspect ratio adjustment, are being performed. Information about the discs is written in detail on the box. Please refer to this if necessary.
- Do not allow the disc to become dirty or scratched, finger prints, dirt, dust, scratches or deposits of cigarette smoke on the recording surface may make it impossible to use the disc for recording.
- DVD-RAM/±RW/±R discs may not be able to play on some DVD players, depending on the player, disc and the condition of the recording.
- Discs with NTSC programmes recorded on them can be played but cannot be recorded using this product.

Playback

PLAYING A DISC

1. Press the **OPEN/CLOSE** button.
2. Place a disc gently into the tray with the disc's label facing up.
3. Press the **OPEN/CLOSE** button to close the disc tray.
 - The HDD & DVD Recorder does not play discs automatically after being powered on initially.
 - When the HDD & DVD Recorder is powered on and a disc is in the tray, the unit will be activated and wait in stop status.
 - Press the **PLAY** (▶) button to start playback.
4. Press the **STOP** (■) button to stop playback.



- When you stop playing back a disc, the HDD & DVD Recorder remembers where you stopped, so when you press **PLAY** (▶) button again, it will pick up where you left off. (Unless the disc is removed or the HDD & DVD Recorder is unplugged, or if you press the **STOP** (■) button twice.)



- Do not move your HDD & DVD Recorder while playing, as this may cause damage to the disc.
- Make sure to press the **OPEN/CLOSE** button to open or close the disc tray.
- Do not push the disc tray while it is being opened or closed, as this may cause a product malfunction.
- Do not place foreign materials on or in the disc tray.
- Some functions may perform differently or be disabled depending on the disc type. If this occurs, refer to the instructions written on the disc case.
- Be especially careful that children's fingers are not caught between the disc tray and the tray chassis when it closes.
- You must only insert one DVD disc at a time. Inserting two or more discs will not allow playback and may cause damage to the HDD & DVD Recorder.

USING THE DISC MENU & TITLE MENU

Some type of discs contain a dedicated menu system that allows you to select special functions for title, chapter, audio track, subtitle, film preview, information on characters, etc.

For DVD-VIDEO Disc



- **Disc Menu** : Press the **DISC MENU** button to enter the disc menu of the disc.
 - Move to the setup menu related to playback operation.
 - You can select audio language and subtitle etc. provided by the disc.
- **Title Menu** : Press the **TITLE MENU** button to move to the title menu of the disc.
 - Some discs may not support the title menu functionality.

For HDD/DVD-RAM/±RW/±R Disc



- **Title List**
Press the **TITLE LIST** button. Title List is a list of previously recorded programmes. If a title is deleted, that title cannot be played again.
- **Play List (HDD/DVD-RAM/-RW(VR))**
Press the **PLAY LIST** button. This refers to a list of user-selected titles. When one playlist is played, only the scene selected by the user will play and then stop. Since only the information necessary for playing a desired scene is included in a playlist, even if that playlist is deleted, the original recording will not be deleted. (only VR mode)

USING THE PLAYBACK RELATED BUTTONS

Searching through a Chapter or Track



During play, press the **SEARCH** (◀▶) buttons on the remote control.

| | |
|----------------------------------|--|
| HDD/DVD-VIDEO/ DVD-RAM/±RW/±R | ▶▶ X 2 → ▶▶ X 4 → ▶▶ X 8 → ▶▶ X 16 → ▶▶ X 32 → ▶▶ X 128 |
| DivX | ▶▶ X 2 → ▶▶ X 4 → ▶▶ X 8 |
| AUDIO CD (CD-DA) | ▶▶ X 2 → ▶▶ X 4 → ▶▶ X 8 |

- You can scan the programme in reverse.
- When you press and hold the **SEARCH** (◀▶) buttons, playback is done at the default speed of X 4. If you release the **SEARCH** (◀▶) buttons, playback is performed at a normal speed.
- To return to normal speed playback, press the **PLAY** (▶) button.



- You can hear sound during forward search(X 2) in HDD/DVD-VIDEO/DVD-RAM/±RW/±R disc.
(No sound is heard during Scan(Search) mode in DivX disc.)
- The speed marked in this function may be different from the actual playback speed.

Skipping Chapters, Titles or Markers



During play, press the **SKIP** (◀▶) buttons on the remote control.

- If you press the **SKIP** (◀) button,
it moves to the beginning of the chapter or title or marker. Pressing the button once again within 3 seconds returns to the beginning of the previous chapter or title or marker
- If you press the **SKIP** (▶) button,
it moves to the next chapter or track or marker

Slow Motion Play



In pause mode, press the **SEARCH** (◀▶) buttons on the remote control.

- If you press the **SEARCH** (▶) button,
▶▶ 1/2 → ▶▶ 1/4 → ▶▶ 1/8
- If you press the **SEARCH** (◀) button,
◀◀ 1/2 → ◀◀ 1/4 → ◀◀ 1/8
- To return to normal speed playback, press the **PLAY** (▶) button.

Press and hold the **SEARCH** (◀▶) buttons during pause, the disc will play slowly at 1/4 speed. If the button is released, the pause operation will resume.



- The speed marked in this function may be different from the actual playback speed.
- Slow motion operates only in the forward direction on DivX discs.

Playback

Step Motion Play



Press the **SKIP** (⏮️⏭️) buttons on the remote control in the pause mode.

- Each time the button is pressed, a new frame will appear.
When the **SKIP** (⏮️) button is pressed, the previous frame will be activated.
When the **SKIP** (⏭️) button is pressed, the next frame will be activated.
- To return to normal speed playback, press the **PLAY** (▶️) button.



- Step motion operates only in the forward direction on DivX discs.

USING THE INFO BUTTON

The INFO function allows you to easily search for a desired scene by accessing title, chapter, time. You can also change the subtitle and audio settings and set some features including Angle, Repeat, Zoom.

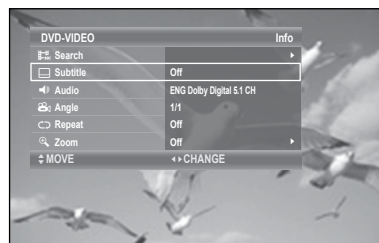
Moving to a scene directly using the INFO



If you want to move to a certain title, chapter or time, use this function.

1. Press the **INFO** button during playback.
2. Press the ▲▼ buttons to select **Search**, then press the **OK** button or ► button.
3. Press the ▲▼ buttons to select **Title**, **Chapter** or **Time**.
4. Press the ◀▶ buttons or number buttons to select the desired scene, then press the **OK** button.

In case of searching a time, enter the time in the sequence of hours, minutes, and seconds using the number buttons. Then press the **OK** button.



- This may not work for some discs.
When an audio CD(CD-DA) or an MP3/JPEG disc is inserted, depending on the disc type, the information display may not appear.
- The Time Search function does not operate on some discs.
- To make the screen disappear, press the **RETURN** button.

SELECTING THE SUBTITLE LANGUAGE



Selects one of the subtitle language recorded on the disc.

You can also operate this function by pressing the **SUBTITLE** button on the remote control.

1. Press the **INFO** button during playback.
2. Press the ▲▼ buttons to select **Subtitle**.
3. Press the ◀▶ buttons to select the desired subtitle language.



- The subtitle display may be different depending on the disc type.
- Some discs will only allow you to select the language for the disc menu.

SELECTING THE SOUNDTRACKS & AUDIO CHANNELS



Selects one of the soundtracks recorded on the disc. Also selects the audio channels from recorded TV programmes.

You can also operate this function by pressing the AUDIO button on the remote control.

1. Press the **INFO** button during playback.
2. Press the **▲▼** buttons to select **Audio**.
3. Press the **◀▶** buttons to select the desired sound tracks or audio channel.



- Soundtracks or Audio channel may be different because they are disc-specific.
- Some discs allow you to select the audio language for the disc menu only.

CHANGING THE CAMERA ANGLE



When a DVD VIDEO contains multiple angles of a particular scene, you can select the Angle function.

1. Press the **INFO** button during playback.
2. Press the **▲▼** buttons to select **Angle**.
3. Press the **◀▶** buttons to select the desired angle.



- This function is disc-dependent, and may not work on all DVDs.
- This function does not work when a DVD has not been recorded with a multi-camera angle system.
- Displays the current angle, total angle number.

REPEAT PLAY


Playing Repeatedly (Repeat Playback)



You can also operate this function by pressing the **REPEAT** button on the remote control.

1. Press the **INFO** button during playback.
2. Press the **▲▼** buttons to select the **Repeat**.
3. Press the **◀▶** buttons to select **Off**, **A-B** or **Title** or **Chapter** you want to play repeatedly, then press the **OK** button.

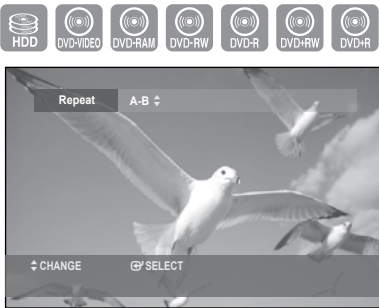


- HDD/DVD-RAM/-RW(VR mode), unfinalised DVD±R and unfinalised DVD-RW (V mode) discs will do not repeat a chapter.
- You can also activate Normal Playback by pressing the **EXIT**() button.

Playback

Repeat A-B

1. Press the **INFO** button during playback.
2. Press the **▲▼** buttons to select **Repeat**.
3. Press the **◀▶** buttons to select **Repeat A-B**, then press the **OK** button.
4. Press the **OK** button at the point where you want the repeat play to start (A) and press it again at the point where you want the repeat play to stop (B). Repeat playback of the A-B section starts.



- If you set point (B) before five seconds of playback has lapsed, the prohibition mark (⊘) will appear.
- You can also activate Normal Playback by pressing the **EXIT** (⏮) button.
- Audio CDs (CD-DA), MP3 discs and DivX discs do not support the Repeat A-B function.

ZOOMING-IN

1. Press the **INFO** button during playback.
2. Press the **▲▼** buttons to select **Zoom**, then press the **OK** or **▶** button.
(⏏) will be displayed.
3. Press **▲▼◀▶** buttons to move to the area you want to enlarge.
4. Press the **OK** button.
The screen will be enlarged to twice the normal size. The screen size will be enlarged to four times the normal size.



| | |
|------------------------------|--|
| HDD/DVD-VIDEO/DVD-RAM/±RW/±R | normal size → X2 → X4 → X2 → normal size |
|------------------------------|--|

- When the recording is done in EP mode, the zoom function is not supported except when the recording has been in DVD-VIDEO and finalised DVD-R/-RW(V).

USING MARKERS

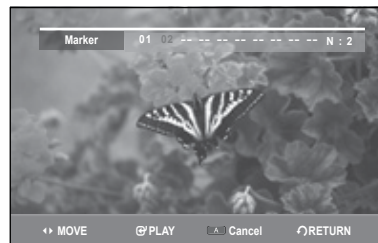


(VR mode)

Set marks at scenes you want to see again so that you can start playback from the marked position.

Setting Markers

1. Press the **MARKER** button during playback.
 2. Press the **OK** button when the desired scene appears.
 - The number 01 is displayed and the scene is memorised.
 3. Press the **▶** button to move to the next position.
 4. Press the **OK** button again when the desired scene appears.
 - The number 02 is displayed and the scene is memorised.
 - HDD, DVD-RAM or DVD-RW (VR Mode) discs have the Marker function instead of the Bookmark function. Since the scenes may be displayed as many different pages, numbering is necessary.
- If a disc in use is encoded with Disc Protection, Markers cannot be set or deleted, only playback is available.



Playing back a marker

1. Press the **MARKER** button during playback.
2. Press the **◀ ▶** buttons to select a marked scene.
3. Press the **OK** or **PLAY** (▶) button to start playing from the selected scene.
 - If you press the **SKIP** (◀) button, it moves to the beginning of the marker. Pressing the button once again within 3 seconds returns to the beginning of the previous marker.
 - If you press the **SKIP** (▶) button, it moves to the next marker.

Clearing a marker

1. Press the **MARKER** button during playback.
2. Press the **◀ ▶** buttons to select a marked scene.
3. Press the **RED(A)** button to delete the selected mark.
 - When a marker is cleared while HDD/DVD-RAM/-RW (VR mode) is playing, marker numbers will change. For example, if the 7th marker is cleared after ten markers are registered, the marker numbers after the eighth will automatically move ahead by one and the 8th marker becomes the 7th.

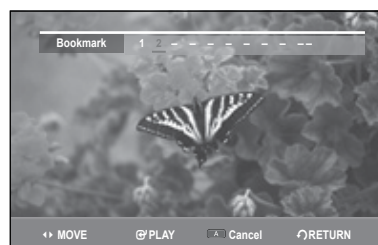
USING THE BOOKMARKS



(V mode)

Setting Bookmarks

1. Press the **MARKER** button during playback.
2. Press the **OK** button when the desired scene appears.
 - The number 1 is displayed and the scene is memorised.
3. Press the **▶** buttons to move to the next position.
4. Press the **OK** button again when the desired scene appears.
 - The number 2 is displayed and the scene is memorised.
 - Repeat above to bookmark other positions.
 - You can bookmark up to 10 scenes.



- When the disc tray is opened and then closed, bookmarks will disappear.

Playback

Playing back a bookmark

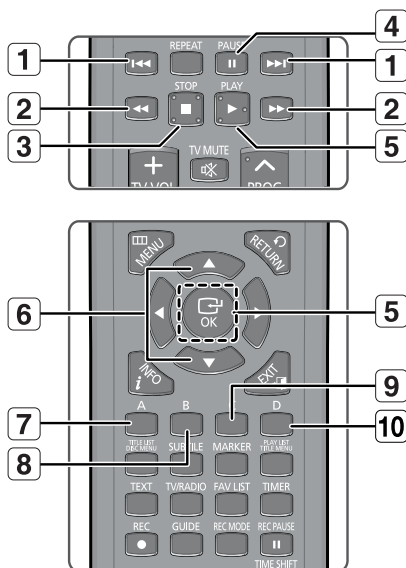
1. Press the **MARKER** button during playback.
2. Press the ◀ ▶ buttons to select a bookmarked scene.
3. Press the **OK** or **PLAY** (▶) button to start playing from the selected scene.

Clearing a bookmark

1. Press the **MARKER** button during playback.
2. Press the ◀ ▶ buttons to select a bookmarked scene.
3. Press the **RED(A)** button to delete the selected bookmark.

PLAYING AN AUDIO CD/MP3

Buttons on the Remote Control used for Audio CD(CD-DA)/MP3 playback

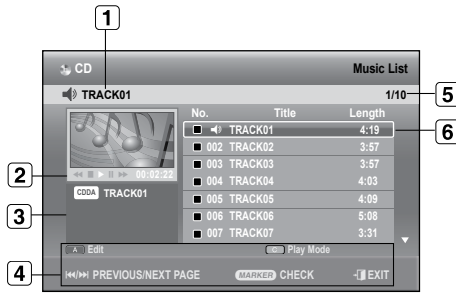


- 1 SKIP** (◀▶) button : Moves to the previous or next page.
- 2 Press the SEARCH** (◀▶) buttons : Fast Play (X 2, X 4, X 8) (Audio CD only)
- 3 STOP** (■) button : Stops a track(song).
- 4 PAUSE** (⏸) button : Pauses playback.
- 5 PLAY** (▶) button, **OK** button : Plays the selected track (song).
- 6 ▲▼** : Selects a track (song).
- 7 RED(A) button** : • Creates a playlist or go to playlist.
• Select All : MP3, CD-DA
• Copy : MP3
• CD Import : Audio CD
- 8 GREEN(B) button** : Selects the sort order. (MP3 disc only)
- 9 YELLOW(C) button** : Selects the play mode. (REPEAT)
- 10 BLUE(D) button** : Selects a contents. (MP3 disc only)

Playing an Audio CD(CD-DA)

1. Insert an audio CD (CD-DA) into the disc tray.
• The audio CD menu appears and the tracks (songs) are played automatically.
2. Press the ▲▼ buttons to select the track (song) you want to hear, and then press the **OK** button.

Audio CD(CD-DA) Screen Elements

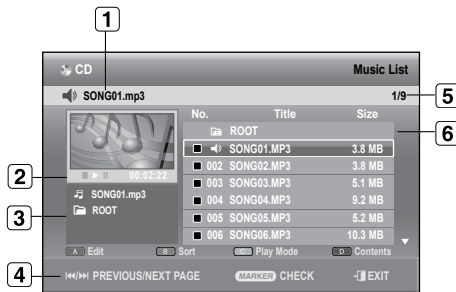


- 1 **Current track (song)** : Displays the number of the track currently being played.
- 2 Displays available buttons and a playback time corresponding to a portion that is currently played.
- 3 Displays the current file type and file name.
- 4 Display available buttons.
- 5 Displays the current play index, total track number.
- 6 Displays the track list (song list).

Playing an MP3 Disc

1. Insert an MP3 disc into the disc tray.
 - The menu is displayed
2. Press the ▲▼ buttons to select **Library**, then press the **OK** or ► button.
3. Press the ▲▼ buttons to select **Music**, then press the **OK** or ► button.
4. Press the ▲▼ buttons to select the track you want to hear, and then press the **OK** button.

MP3 Screen Elements

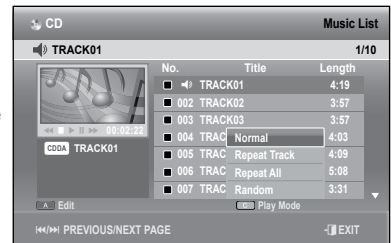


- 1 **Current track (song)** : Displays the name of the track being played.
- 2 Displays available buttons and a playback time corresponding to a portion that is currently played.
- 3 Displays the current file type, file name and folder name.
- 4 Displays available buttons.
- 5 Displays the current play index, total track number.
- 6 Displays the track list (song list).

Repeat CD (CD-DA) & MP3


You can also operate this function by pressing the **REPEAT** button on the remote control. During playback, press the **REPEAT** button repeatedly to select the repeat mode you want.

1. Press the **YELLOW(C)** button during the Music List playback.
2. Press the ▲▼ buttons to select desired play mode, then press the **OK** or ► button.
 - **Normal (CD (CD-DA)/MP3)** : Tracks on a disc are played in the order in which they were recorded on the disc.
 - **Repeat Track (CD (CD-DA)/MP3)**
 - **Repeat Folder (MP3)**
 - **Repeat All (CD (CD-DA)/MP3)**
 - **Random (CD (CD-DA)/MP3)** : The random option plays a disc's tracks in random order.



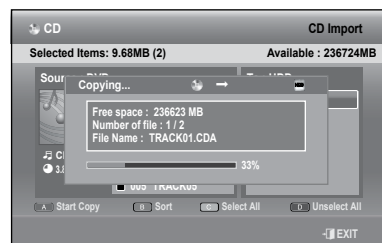
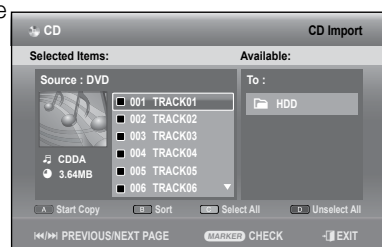
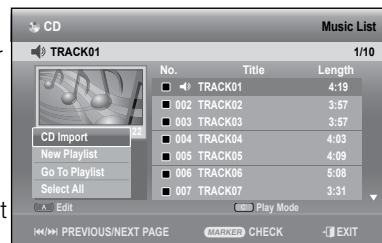
Playback

CD Import

1. Press the **RED(A)** button during the Music List playback.
2. Press the **▲▼** buttons to select **CD Import**, then press the **OK** or **▶** button.
3. Press the **▲▼** buttons to select file you want to copy, then press the **MARKER** button until a checkmark appears.
 - If you don't want to copy a certain one of the checked entries, simply select that entry and press **MARKER** button to deselect it until a checkmark disappears.
4. Press the **▶▲▼** buttons to select the target media, then press the **OK** button.
 - You can create a new folder by pressing the **GREEN(B)** button.
5. Press the **RED(A)** button to select Start Copy. The message "Number of file : x" is displayed.
6. Press the **◀▶** buttons to select Start, then press the **OK** button. File copy begins.
 - To cancel the copying in progress, press the **EXIT** () button.



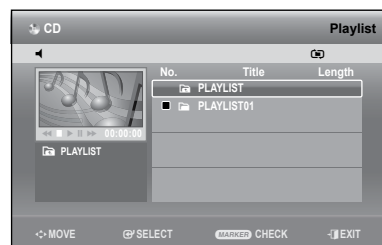
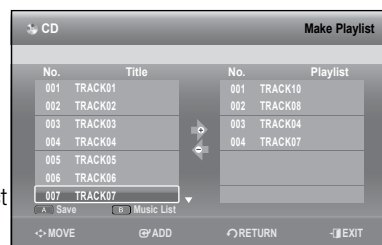
- The format of a mp3 file after imported is as follows:
 Bit Rate 128kbps
 Channel 2(stereo)
 Sampling Rate 44KHz
- DTS CDDA and copy protected discs can not be imported.



New Playlist

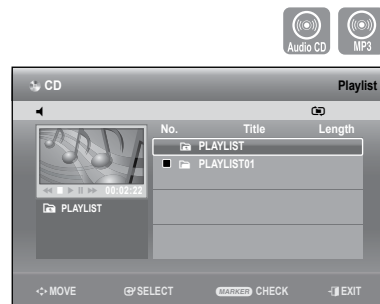
You can register a maximum 30 tracks in the playlist.

1. Press the **RED(A)** button during the Music List playback.
2. Press the **▲▼** buttons to select **New Playlist**, then press the **OK** or **▶** button.
3. Press the **▲▼** buttons to select tracks in the order in which you want them to play, then press the **OK** button.
 - If you playlisted a wrong track, press the **▶▲▼** buttons to select the wrong track, then press the **OK** button.
4. To store the Playlist, press the **RED(A)** button. A new Playlist will be created.



Go To Playlist

1. Press the **RED(A)** button during the Music List playback.
2. Press the **▲▼** buttons to select **Go To Playlist**, then press the **OK** or **▶** button.
3. Press the **▲▼** buttons to select the desired playlist folder, then press the **OK** button.
The selected tracks are played automatically.



Delete the Playlist

1. Press the **RED(A)** button during the Music List playback.
2. Press the **▲▼** buttons to select **Go To Playlist**, then press the **OK** or **▶** button.
3. Press the **▲▼** buttons to select the Playlist you want to delete.
4. Press the **RED(A)** button.
5. Press the **◀▶** buttons to select **Yes**, then press the **OK** button.
The selected Playlist is deleted.



- When the player turns off or opens a file /disconnects, any playlists in the disc or USB memory will be deleted.

Go To Edit Playlist

1. Press the **RED(A)** button during the Music List playback.
2. Press the **▲▼** buttons to select **Go To Playlist**, then press the **OK** or **▶** button.
3. Press the **▲▼** buttons to select the Playlist you want to edit.
4. Press the **GREEN(B)** button in playlist mode.
5. Press the **▲▼** buttons to select tracks in the order in which you want them to play, then press the **OK** button.
 - If you playlisted a wrong track, press the **▶▲▼** buttons to select the wrong track, then press the **OK** button.
6. To store the Playlist, press the **RED(A)** button.
Playlist will be edited.

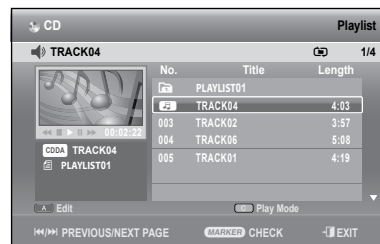


Playback

Go To Music List



1. Press the **BLUE(D)** button during the Playlist playback.
The Music List will be displayed.

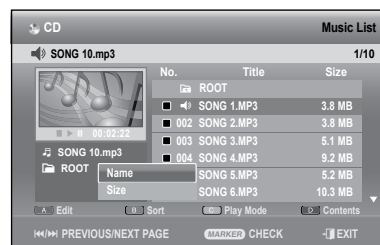


Using the Sort



When you need to change the Sort order of Music List, you can change it simply.

1. While the list menu is displayed, press the **GREEN(B)** button to select Sort.
2. Press the **▲▼** buttons to select the desired item, then press the **OK** or **▶** button.
 - **Name** : In alphabetical order
 - **Size** : In order of audio file size.



- Audio CD(CD-DA) is not available.
- You can sort by Name, Length. Sorted list will be resorted in copied order upon reentering Music List.

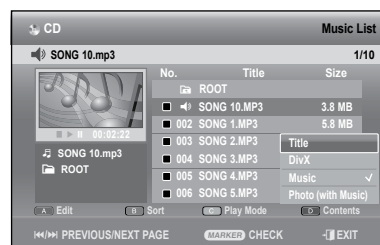
Select Contents



1. Press the **BLUE(D)** button to select **Contents**.
2. Press the **▲▼** buttons to select the contents you want to move, then Press the **OK** or **▶** button.



- This function is possible only when the disc contains the selected contents.
- Audio CD(CD-DA) is not available.



MUSIC/PHOTO SIMULTANEOUS PLAYBACK

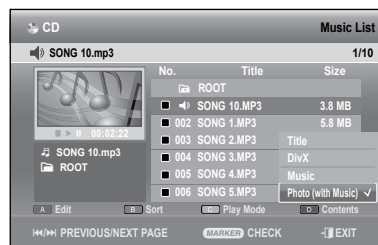


You can listen to the music while watching the photo.

1. Press the **BLUE(D)** button to select **Contents**.
2. Press the **▲▼** buttons to select the **Photo(With Music)**, then Press the **OK** or **▶** button.
The photo List will be displayed. (See page 65~67.)



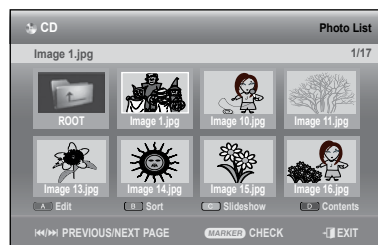
- To operate this function, you have to select the disc containing both music files and photo file.



VIEWING A PICTURE



1. Insert a JPEG disc into the disc tray.
 - The menu is displayed
2. Press the **▲▼** buttons to select **Library**, then press the **OK** or **▶** button.
3. Press the **▲▼** buttons to select **Photo**, then press the **OK** or **▶** button.
 - To see the next 8 pictures, press the **SKIP** (**▶▶**) button.
 - To see the previous 8 pictures, press the **SKIP** (**◀◀**) button.
4. Press the **▲▼◀▶** buttons to select a desired picture, then press the **OK** button.

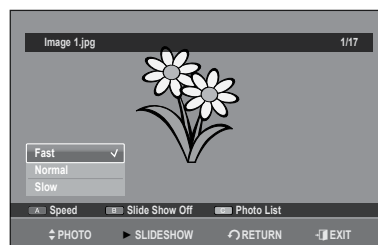
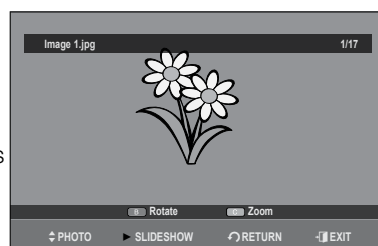


Slide Show

5. Press the **PLAY** (**▶**) button.
 - Once in the Photo List, you can also operate Slide Show in by pressing the **YELLOW(C)** button.
6. Press the **RED(A)** button to select Speed.
7. Press the **▲▼** buttons to select the Slide Show speed, then press the **OK** or **▶** button.
The Slide Show starts and plays at the selected speed.
 - You can go to **Photo List** by pressing **YELLOW(C)** button.

❖ To stop the Slide Show

Press the **GREEN(B)**, **STOP** (**■**) or **RETURN** button.



Playback

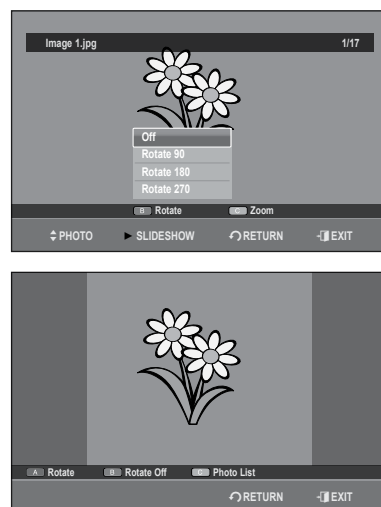
Rotate

To setup, follow steps 1 to 4 on page 65.

- 5¹. Press the **GREEN(B)** button to select Rotate.
6. Press the **▲▼** buttons to select the rotate angle, then press the **OK** or **▶** button.
 - Once you select a rotate angle, you can change it by pressing the **RED(A)** button.
 - You can go to **Photo List** by pressing **YELLOW(C)** button.

❖ To stop the Rotate

Press the **GREEN(B)**, **STOP(■)** or **RETURN** button.



Zoom

To setup, follow steps 1 to 4 on page 65.

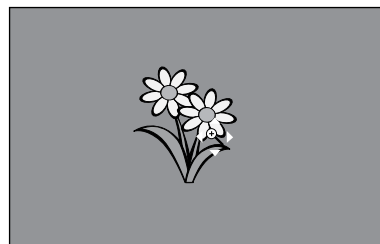
- 5¹. Press the **YELLOW(C)** button to select Zoom.
6. Each time the **OK** button is pressed, the picture is enlarged up to 4x (four times the normal size).

→ X2 → X4 → X2 → Normal

- You can go to **Photo List** by pressing **YELLOW(C)** button.

❖ To stop the Zoom

Press the **GREEN(B)**, **STOP(■)** or **RETURN** button.



Go To Photo List

To setup, follow steps 1 to 4 on page 65.

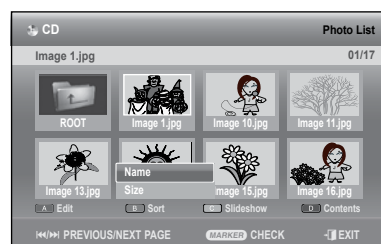
- 5¹. Press the **RETURN** button to go to **Photo List**.

Using the Sort

When you need to change the Sort order of Photo List, you can sort by Name and Size.

To setup, follow steps 1 to 4 on page 65.

1. While the list menu is displayed, press the **GREEN(B)** button to select **Sort**.
2. Press the **▲▼** buttons to select the desired item, then press the **OK** or **▶** button.
 - **Name** : In alphabetical order
 - **Size** : In order of photo file size.

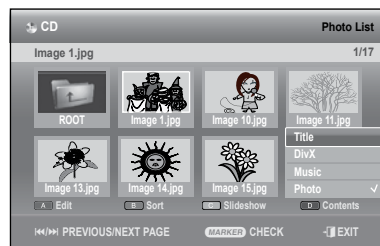


- You can sort by Name, Size. Sorted list will be resorted in copied order upon reentering Photo List.

Select Contents

To setup, follow steps 1 to 3 on page 65.

1. Press the **BLUE(D)** button to select **Contents**.
2. Press the **▲▼** buttons to select the contents you want to move, then Press the **OK** or **▶** button.



- This function is possible only when the disc contains the selected contents.

PLAYING A DIVX



Using the MENU button

1. Insert a DivX disc into the disc tray.
 - The menu is displayed
2. Press the **▲▼** buttons to select **Library**, then press the **OK** or **▶** button.
3. Press the **▲▼** buttons to select **DivX**, then press the **OK** or **▶** button.
4. Press the **▲▼** buttons to select the avi file (DivX), then press the **OK** or **PLAY** (**▶**) button.
5. When DivX file is played, you can use following functions. Pressing the **STOP** (**■**) button once during playback will display the file list, pressing the button again will exit the menu screen.



DivX Function Description

| Function | Description |
|--------------|--|
| Skip Scene | During play, press the SKIP (⏮ ⏭) buttons, it moves forward or backward 5 minutes. |
| Search Scene | During play, press the SEARCH (⏮ ⏭) buttons and press again to search at a faster speed. (X 2, X 4, X 8) |
| Slow Motion | In pause mode (⏸), press the SEARCH (⏭) button on the remote control. (1/2, 1/4, 1/8) Reverse Slow Motion Play is not available. |
| Step Motion | In pause mode (⏸), press the SKIP (⏭) buttons on the remote control. Reverse Step Motion Play is not available. |

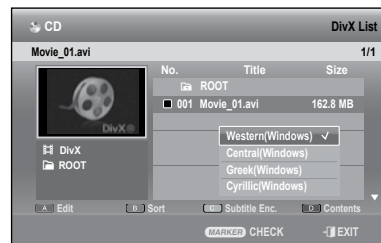


- Some DivX files created on a personal computer can not be played back. That is why Codec Type, Version and Higher resolution over specification are not supported.

Playback

DivX Subtitle Encoding

1. Press the **YELLOW(C)** button in the file list.
2. Press the **▲▼** buttons to select a supported DivX subtitle language by region, then press the **OK** button.



| | |
|----------|--|
| Western | Afrikaans, Basque, Catalan, Danish, Dutch, English, Faeroese, Finnish, French, German, Icelandic, Indonesian, Italian, Malay, Norwegian, Portuguese, Spanish, Swahili, Swedish |
| Central | English, Albanian, Croatian, Czech, Hungarian, Polish, Romanian, Serbian(Latin), Slovak, Slovenian |
| Greek | English, Greek |
| Cyrillic | English, Azeri, Belarusian, Bulgarian, Kazakh, Macedonian, Russian, Serbian, Tatar, Ukrainian, Uzbek |

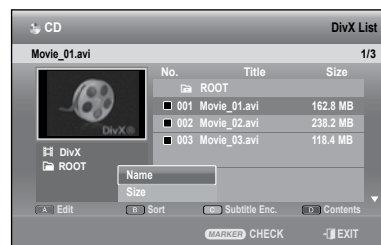


- If the subtitle language is displayed in broken fonts, change DivX Subtitle to the appropriate region. If it still does not work, the format is not supported.

Using the Sort

When you need to change the Sort order of DivX List, you can change it simply.

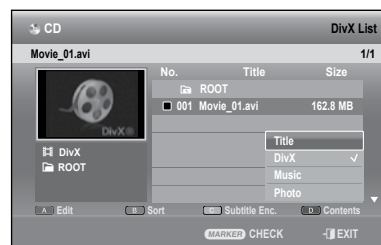
1. While the list menu is displayed, press the **GREEN(B)** button to select **Sort**.
2. Press the **▲▼** buttons to select the desired item, then press the **OK** or **▶** button.
 - **Name** : In alphabetical order
 - **Size** : In order of DivX file size.



- You can sort by Name, Size. Sorted list will be resorted in copied order upon re-entering DivX List.

Select Contents

1. Press the **BLUE(D)** button to select **Contents**.
2. Press the **▲▼** buttons to select the contents you want to move, then press the **OK** or **▶** button.



- This function is possible only when the disc contains the selected contents.







Recording

This section shows various HDD&DVD Recording methods.

This unit can record on various types of discs. Before recording, read the following instructions and select the disc type according to your preference.

RECORDABLE DISCS

This HDD & DVD Recorder can record on the following discs.

| HDD | DVD-RAM | DVD-RW | DVD-R | DVD+RW | DVD+R |
|---|---|---|---|---|--|
|  |  |  |  |  DVD+ReWritable |  DVD+R |

- DVD-RAMs and DVD±RWs are rewritable.
- DVD±Rs are non-rewritable.

Compatibility between Samsung and Other Company's Recorder

| Disc Types | Recording format | Recording Device | Finalising | Additional Recording in Samsung Recorder |
|------------|------------------|------------------|---------------|--|
| DVD-RAM | VR Mode | Samsung | X | Recordable |
| | | Other Company | X | Recordable |
| DVD-RW | VR Mode | Samsung | finalised | Not recordable |
| | | | not finalised | Recordable |
| | | Other Company | finalised | Not recordable |
| | | | not finalised | Recordable |
| | V Mode | Samsung | finalised | Not recordable |
| | | | not finalised | Recordable |
| | | Other Company | finalised | Not recordable |
| | | | not finalised | Not recordable |
| DVD-R | V Mode | Samsung | finalised | Not recordable |
| | | | not finalised | Recordable |
| | | Other Company | finalised | Not recordable |
| | | | not finalised | Not recordable |
| DVD+RW | - | Samsung | X | Not recordable in some cases |
| | | Other Company | X | Not recordable in some cases |
| DVD+R | - | Samsung | finalised | Not recordable |
| | | | not finalised | Not recordable in some cases |
| | | Other Company | finalised | Not recordable |
| | | | not finalised | Not recordable in some cases |

Recording



■ Finalise

- This closes the DVD-RW/±R so no additional recording can be done.

■ Unfinalise

- This allows additional recording on a DVD-RW disc originally recorded on the HDD & DVD Recorder.
- A DVD-RW disc that has been recorded by DAO(Disc At Once) in a PC cannot be unfinalised.
- A DVD-RW disc that has been recorded in Video Mode of a different maker's recorder cannot be unfinalised.
- A DVD±R disc cannot be unfinalised.

- An additional recording could be failed in the same recorder of SAMSUNG.

RECORDING FORMATS

When you insert an unused disc, the following message appears. Since available functions differ depending on the disc type, select a disc that best fits your preferences.

DVD-RAM/+R : Formatting will be started automatically.

DVD+RW : Use after formatting the disc.

DVD-RW : Use after initialising the disc.

If you want to change the VR or V mode, refer to Formatting a Disc on pages 101~102.

DVD-R : Formatting disc is unnecessary and only V Mode Recording is supported.

DVD-RAM/-RW(VR mode)

- This mode allows multiple editing functions (such as deletion of the whole title, partial deletion of a title, etc.).
- Various editing options using a created Playlist.

DVD-RW(V mode)/-R

- Chapters will be created automatically when you finalise recording on DVD-RW/-R discs in V mode.
The chapter's length (interval between chapters) varies according to the recording mode.
- Simple editing (erasing titles/changing title name).

DVD+RW

- With DVD+RW discs, there is no difference between DVD-Video format(Video mode) and DVD-Video Recording format(VR mode).

RECORDING MODE

Select one of four recording modes by pressing the REC MODE button repeatedly while the unit is in Stop mode for the desired recording time and picture quality. In general, picture quality improves as the recording time decreases. In FR mode, the most suitable record mode is adjusted automatically, according to remaining time on the disc and length of the timer recording. This function is selected only one mode in XP, SP, LP and EP modes and you can use this mode for timer recording.

• DVD-SH893M

| Recording Mode | Recording Times | |
|-------------------------------|--|--|
| | HDD (160GB) | DVD-RAM/±RW/±R |
| XP (high quality mode) | Approx. 33 hours | Approx. 1 hour about 8.5 Mbps |
| SP (standard quality mode) | Approx. 67 hours | Approx. 2 hours about 4.5 Mbps |
| LP (long recording mode) | Approx. 133 hours | Approx. 4 hours about 2 Mbps |
| EP (extended mode) | Approx. 199 hours Approx. 264 hours | Approx. 6 hours/ about 1.6 Mbps Approx. 8 hours/ about 1.2 Mbps |
| FR (Flexible Recording) | Approx. 33 hours ~ 264 hours | Approx. 1~8 hours |

• DVD-SH895M

| Recording Mode | Recording Times | |
|-------------------------------|--|--|
| | HDD (250GB) | DVD-RAM/±RW/±R |
| XP (high quality mode) | Approx. 53 hours | Approx. 1 hour about 8.5 Mbps |
| SP (standard quality mode) | Approx. 106 hours | Approx. 2 hours about 4.5 Mbps |
| LP (long recording mode) | Approx. 211 hours | Approx. 4 hours about 2 Mbps |
| EP (extended mode) | Approx. 316 hours Approx. 421 hours | Approx. 6 hours/ about 1.6 Mbps Approx. 8 hours/ about 1.2 Mbps |
| FR (Flexible Recording) | Approx. 53 hours ~ 421 hours | Approx. 1~8 hours |

Recording

• DVD-SH897M

| Recording Mode | Recording Times | |
|-------------------------------|--|--|
| | HDD (320GB) | DVD-RAM/±RW/±R |
| XP (high quality mode) | Approx. 68 hours | Approx. 1 hour about 8.5 Mbps |
| SP (standard quality mode) | Approx. 135 hours | Approx. 2 hours about 4.5 Mbps |
| LP (long recording mode) | Approx. 270 hours | Approx. 4 hours about 2 Mbps |
| EP (extended mode) | Approx. 405 hours Approx. 534 hours | Approx. 6 hours/ about 1.6 Mbps Approx. 8 hours/ about 1.2 Mbps |
| FR (Flexible Recording) | Approx. 68 hours ~ 534 hours | Approx. 1~8 hours |



- Recording time may vary according to specific conditions.
- 1GB = 1,000,000,000 bytes; actual formatted capacity may be less as the internal firmware uses a portion of the memory.
- The dual layer DVD±Rs have approximately double the capacity of single layer DVD±Rs. (See pages 54~55)
- DVB-T recording is possible only on FR mode.
- On DVB-T recording, recording mode will be automatically determined depending on the quality of the video (or audio).

UNRECORDABLE PICTURES

Video with copy protection cannot be recorded on this HDD & DVD Recorder.

When the HDD & DVD Recorder receives a copy-guard signal while recording, recording stops and the following message appears on the screen.

Concerning Copy Control Signals

TV broadcasts that contain copy control signals may have one of the following three signal types, Copy-Free, Copy-Once and Copy-Never. If you want to record a copy-once type programme, use DVD-RW with CPRM in VR Mode, DVD-RAM and HDD.

| Media \ Signal type | Copy-Free | Copy-Once | Copy-Never |
|------------------------------|-----------|-----------|------------|
| DVD-RW (Ver.1.1) | 0 | - | - |
| DVD-RW(Ver.1.1) with CPRM | | | |
| VR mode | 0 | 0* | - |
| V mode | 0 | | - |
| DVD-R | 0 | | - |
| DVD-RAM (Ver.2.0) | 0 | 0* | - |
| DVD+RW | 0 | - | - |
| DVD+R | 0 | - | - |
| HDD | 0 | 0* | - |

Once "Copy Once" has been recorded, recording cannot be done anymore.

❖ Content Protection for Recordable Media (CPRM)

CPRM is a mechanism that ties a recording to the media on which it is recorded. It is supported by some HDD & DVD Recorders, but not by many DVD players. Each blank recordable DVD has a unique 64-bit media ID etched in the BCA. When protected content is recorded onto the disc, it can be encrypted with a 56-bit C2 (Cryptomeria) cipher derived from the media ID.

During playback, the ID is read from the BCA and used to generate a key to decrypt the contents of the disc. If the contents of the disc are copied to other media, the ID will be absent or wrong and the data will not be decryptable.

RECORDING IMMEDIATELY



Before you start

1. Check that the disc has enough available space for the recording.
2. Press the **HDD** or **DVD** button.
If you select DVD, Press the **OPEN/CLOSE** button and place a recordable disc on the disc tray.
Press the **OPEN/CLOSE** button to close the disc tray.
Wait until **LOAD** disappears from the front panel display.

Recording

Recording the current TV programme you are watching

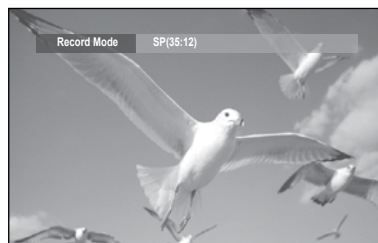
1. Press the **PROG** () or number buttons to select the current programme you want to record.
2. Press the **REC MODE** button repeatedly, (or press the **REC MODE** button and then press the **▲▼** buttons) to select the recording speed(quality).

→ SP → LP → EP → XP →

3. Press the **REC** button.
Information concerning the channel is displayed on the screen, then recording begins.
Icon(● REC) is displayed on the front panel.



- The REC mode is disabled in the DTV.



Recording from external equipment you are watching

1. Press the **SOURCE** button to select the input source according to the connection you made.
The front panel display changes in the following sequence:

→ PR Number → AV1 → AV2 → AV3 → DV →

If you connect a digital camcorder, press the **SOURCE** button to select **DV**. (See page 75)

2. Press the **REC MODE** button repeatedly, (or press the **REC MODE** button, then press the **▲▼** buttons) to select the recording speed (quality).
3. Press the **REC** button.
Information concerning the external input mode is displayed on the screen, then recording begins.
Icon(● REC) is displayed on the front panel.

To pause recording

- Press the **REC PAUSE** button to pause a recording in progress.
- Press the **REC PAUSE** button again during pause to resume recording.
- You can switch channels by pressing the **PROG** () buttons while recording pauses. (Analogue broadcasting only)
- If you select DV mode during rec pause, recording will be stopped.
If you change the input source during rec pause in DV mode , recording will be stopped.



- In DTV mode, if you press the **REC PAUSE** button:
 - The channel will not be switched and the TV/RADIO key is disabled.
 - Switching to the analogue channel or changing the input source will be applied after the recording is stopped.
- In ANALOGUE mode, if you press the **REC PAUSE** button:
 - Switching to DTV mode will be applied after the recording is stopped.

To stop recording

Press the **STOP** () button to stop or finish a recording in progress.

- When using DVD-RAM/±RW/±R discs, the message "Updating the information of disc. Please wait for a moment" is displayed.



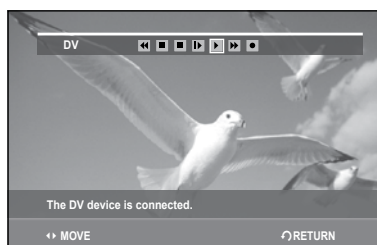
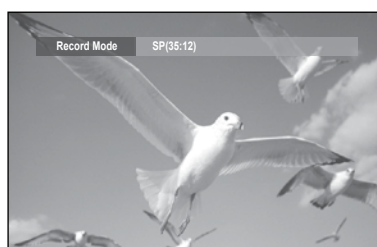
- You can not change the recording mode while recording.
- Recording will stop automatically if there is no free space left for recording.
- Up to 99 titles can be recorded onto a DVD-RAM/-RW/-R disc, and up to 48 titles onto a DVD+RW/+R disc.
- Up to 999 titles can be registered on the HDD.
- HDD recording is available for up to 24 hours, and when recording for 24 hours, 3 titles will be recorded with each being 8 hours in length.
- Recording will stop automatically if a copy protected image is selected.
- DVD-RAM/±RW discs must be formatted before starting to record. Most new discs are sold unformatted.
- Do not use DVD-R authoring discs with this unit.

COPYING FROM A CAMCORDER



You may control the Camcorder using the IEEE1394 (DV) interface.

1. Connect the DV output jack of your camcorder to the DV input jack on the front of your HDD & DVD Recorder using a DV cable.
2. Press the **HDD** or **DVD** button.
If you select DVD, press the **OPEN/CLOSE** button and place a recordable disc on the disc tray. Press the **OPEN/CLOSE** button to close the disc tray. Wait until **LOAD** disappears from the front panel display.
3. Press the **REC MODE** button repeatedly to select the recording speed(quality).
4. Press the **SOURCE** button to select **DV**.
If the input is set to DV, a playback/record menu that enables camcorder control appears on the top of the screen.
5. Select the Play (▶) icon on the upper part of the screen to playback the camcorder and find the starting position to copy.
6. To start recording, use the ◀ ▶ buttons to select Record (●) icon in the top side of the screen, then press the **OK** button.
You can press the **REC** button on the remote control to start recording.



To stop recording

Press the **STOP** (■) button to stop or finish a recording in progress.

- When using DVD-RAM/±RW/±R discs, the message "Updating the information of disc. Please wait for a moment" is displayed.



- To display playback related icons on the screen, press any direction button on the remote control.

Recording

MAKING A ONE TOUCH RECORDING (OTR)



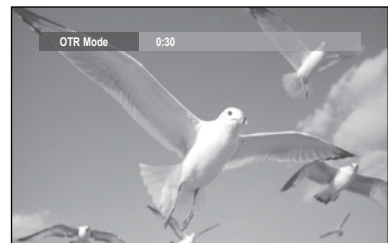
You can set the HDD & DVD Recorder to record in 30-minute increments up to 8 hours by pressing the **REC** button.

1. Press the **HDD** or **DVD** button.
If you select DVD, press the **OPEN/CLOSE** button and place a recordable disc on the disc tray. Press the **OPEN/CLOSE** button to close the disc tray. Wait until **LOAD** disappears from the front panel display.
2. Press the **PROG** (📺) or number buttons to select the programme to record.
3. Press the **REC** button to start recording.
4. Press the **REC** button repeatedly to adjust the desired recording time.

→ 0:30 → 1:00 → ... 8:00 → Off



- The timer counter decreases by the minute from 8:00 to 0:00, then the HDD & DVD Recorder stops recording.



To stop recording

Press the **STOP** (■) button. The message “Do you want to stop recording?” is displayed.

- Press the ◀ ▶ buttons to select **Yes**, then press the **OK** button.
- Or press the **STOP** (■) button again.

SIMULTANEOUS RECORDING AND PLAYBACK



You can play back from the beginning of the programme you are currently recording.
You can watching the previous title list while recording a programme.

Using the **PLAY** (▶) button

1. With the unit in recording mode, press the **PLAY** (▶) button.
It plays back the title that you are currently recording from the beginning.
Playback is not available for 10 seconds from the start of recording.
You can use the **SKIP** (⏮ ⏭) and other playback-related buttons to view the previous recorded list.



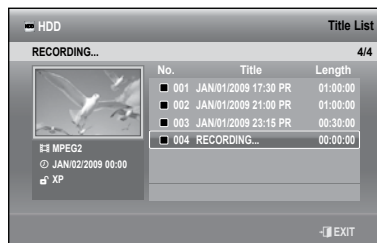
Stopping Playback / Recording

1. Press the **STOP** (■) button. Playback screen disappears and the recording in progress screen appears.
2. Pressing the **STOP** (■) button once more will stop the recording.



Using the TITLE LIST button

1. With the unit in recording mode, press the **TITLE LIST** button.
The above operation is possible from approx. 10 seconds or more after recording starts.
Press the **▲▼/SKIP** (◀▶) buttons to select the recording title list.
2. Press the **OK** or **PLAY** (▶) button.
It plays back the title that you are currently recording from the beginning.



Using the MENU button

1. With the unit in recording mode, press the **MENU** button.
2. Press the **▲▼** buttons to select **Title**, then press the **OK** button.
Title List screen is displayed.
3. Press the **▲▼/SKIP** (◀▶) buttons to select the recording title list, then press the **OK** or **▶** button.
It plays back the title that you are currently recording from the beginning.

Stopping Playback / Recording

1. Press the **STOP** (■) button once, playback screen disappears and the Title List screen appears.
2. Pressing the **MENU** (☷) button again, the recording in progress screen appears.
3. Pressing the **STOP** (■) button once more will stop the recording.



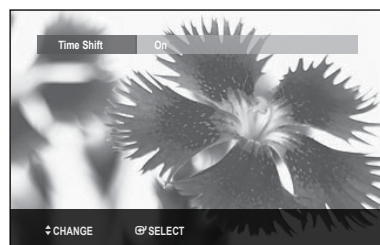
- No sound is heard during search mode.
- DVD disc or HDD playback is available during HDD recording. However, JPEG, MP3, and DivX files in the disc cannot be played back.
- HDD playback is available during DVD recording. However, JPEG and MP3 files in the HDD cannot be played back.

TIME SHIFT FUNCTION AS A LIVE SIGNAL



This function replays recordings as a live signal.

If you are interrupted while watching a TV programme, simply press the **TIME SHIFT** button, and the HDD & DVD Recorder immediately starts recording the programme.

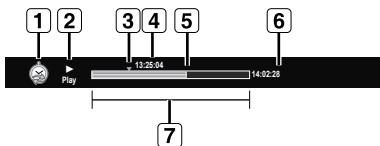


Recording

Using the Time Shift function

1. Press the **TIME SHIFT** button on the remote control.
The Time Shift menu is displayed.
2. Press the **▲▼** button to select **On**, then press the **OK** button.
3. While watching the currently broadcasting programme, press the **PAUSE** (**⏸**) button.
The programme on TV is set in pause mode and the Time Shift Bar is displayed.
4. Press the **PLAY** (**▶**) button to resume watching the programme.

Time Shift Screen Elements



1 Informs you that the timeshift is currently working.

2 Displays the current status.

3 Watching Point.

4 Current play time.

5 Live Point.

6 Live Time.

7 Time Shift Time Bar

Buttons on the Remote Control used for Time Shift function

1. **PLAY** (**▶**) button : Playback.
2. **PAUSE** (**⏸**) button : Pause live TV.
3. **SEARCH** (**⏮** **⏭**) buttons : Fast play (X 2, X 4, X 8, X 16, X 32, X 128)
4. **SKIP** (**⏮**) button, **STOP** (**■**) button : Moves to Live point.
5. **STOP** (**■**) button : If you press this button in the Live point, a dialog box appears where you can stop Time Shift.
6. **SKIP** (**⏮**) button : Returns to the point where Time Shift begins.
7. **EXIT** (**🖱**) or **RETURN** (**🖱**) button : Hides the Time Shift icon or the time bar.
8. **◀▶** : Display Time shift Progressive Bar.



- The Time Shift is available only when HDD mode is selected.
- You can use this function for up to maximum two hours.
- You can only play the contents by using the menu when the Time Shift is set to On.
- Press **TIME SHIFT** button to cancel the Time shift function.

MAKING A TIMER RECORDING



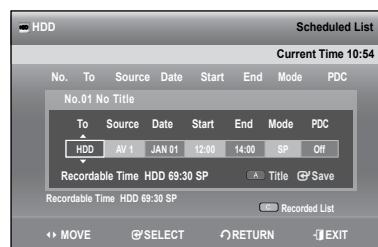
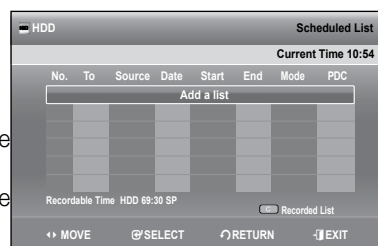
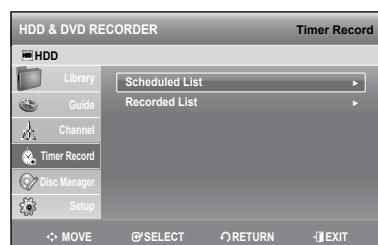
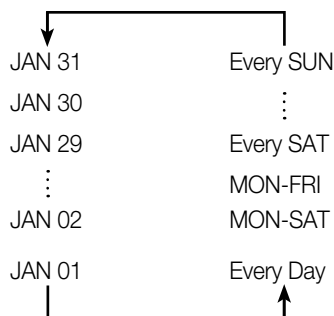
1. Check if the antenna cable is connected.
2. Check if the remaining time of the disc.
3. Check if the date and time are correct.

Make sure the Clock (Setup-Clock Set) is set before you proceed with a timer recording. (See pages 35~36)



Using the TIMER button

1. With the unit in Stop mode, press the **TIMER** button.
2. Press the **▲▼** button to select the **Scheduled List**, then press the **OK** or **▶** button.
3. Press the **OK** button to select **Add a list**.
4. Set timer recording option.
 - Fill the input items using the **▲▼◀▶** buttons and number buttons.
 - **◀▶** : Moves to the previous/next item.
 - **▲▼**, 0~9 : Sets a value.
 - **To** : Select the media to record HDD or DVD.
 - **Source** : The video input source (AV1, AV2 or AV3), or the broadcasting channel you want to make a timer recording from. To convert DTV/Analogue, press **DTV/ANALOGUE** button of the remote control. On the DTV mode, you can change TV or RADIO by pressing the **TV/RADIO** button on the remote control.
 - **Date** : Timer Recording allows setting the recording time within one month period. Set the recording day. (month/day)



- **Start/End Time** : Start and end time of the timer recording.
- **Mode (Recording Mode)** :
 - FR (Flexible Recording) : Select when you want to set video quality automatically. In FR mode, the most suitable record mode is adjusted automatically, according to the remaining time on the disc and length of the timer recording. This function is selected only one mode in XP, SP, LP and EP modes.
 - XP (high quality) : Select when video quality is important.
 - SP (standard quality) : Select to record in standard quality.
 - LP (low quality) : Select when a long recording time is required.
 - EP (extended) : Select when a longer recording time is required.

Recording



- DVB-T Timer recording is possible only on FR mode.
- On DVB-T recording, recording mode will be automatically determined depending on the quality of the video (or audio).
- If you select the number of scheduled list which has been set the series recording, 'series recording on' will be displayed above the button display.

- **PDC** : PDC (Programme Delivery Control) function.
 - If you set this function on, you can control the starting and ending time of recording by special signal included in the broadcasting signal. If a TV programme is shortened or starts earlier or later than scheduled, this function synchronizes the starting and ending time of recording with the actual broadcasting time automatically.
 - Set up the start-time EXACTLY according to the published TV schedule. Otherwise the timer recording will not operate.
 - Do not select PDC unless you are sure the programme you wish to record is broadcast with PDC.
- **TITLE** : To label the title name, press the **RED(A)** button.
 - Title renaming screen appears.
 - Follow steps 4 and 5 of "Renaming (Labelling) a Title" on pages 84~85.


5. After selecting the set up value for each mode, press the **OK** button to select **Save**.

-  will appear on the front panel. It means that a timer recording is registered.

If the timer settings overlap;

The programmes are recorded in order of priority. After recording of the first programme is complete, the second programme starts being recorded.

To exit without saving the current setting


Press the **EXIT** () button.

To return to the previous menu

Press the **RETURN** button if you don't want to set a timer recording.

6. Turn the power off to finish the Timer Recording setting.
Timer Recording will not work when the power is on.




- The timer recording time may differ from the set time depending on disc status and overall timer recording status (for example, recording times overlapping, or when the previous recording ends within 2 minutes before the start time of the next recording.)
- You can set up to 12 Timer Recordings.
- If HDD disk has no available recording space,  blinks. It means that HDD disk has no space to record.
- If you have set the Timer Recording using PDC, the fan can still operate and make a noise when the power is off.

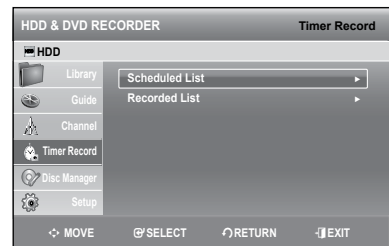
Editing the Scheduled List

Follow these directions to edit the Scheduled List.



Using the TIMER button

1. With the unit in Stop mode, press the **TIMER** button.
2. Press the **▲▼** button to select the **Scheduled List**, then press the **OK** or **▶** button.
3. Press the **▲▼** buttons to select the number of the Scheduled List you want to edit, then press the **OK** button.
 - Edit the items you want to modify. See the “Making a Timer Recording” section for more information on Timer Recording Input items. (See pages 79~81)
4. Press the **OK** button to confirm the edited setting.
5. Press the **EXIT** () button after finishing the operation. The Scheduled List screen will disappear.




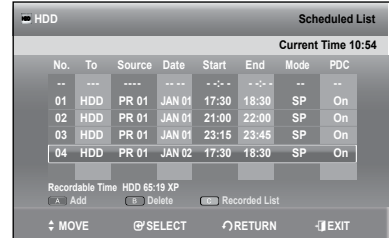
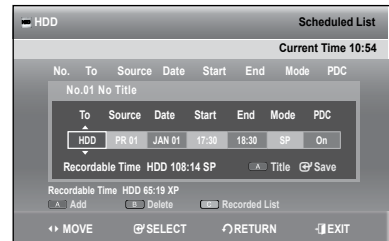
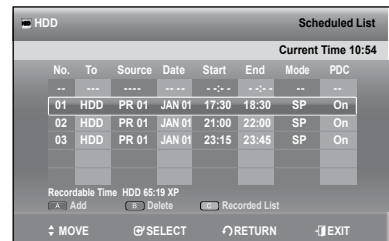
Adding a Scheduled List

Follow these directions to add an entry from the Scheduled List.



Using the TIMER button

1. With the unit in Stop mode, press the **TIMER** button.
2. Press the **▲▼** button to select the **Scheduled List**, then press the **OK** or **▶** button.
3. Press the **▲▼** buttons to select the number of the Scheduled List, then press the **RED(A)** button.
 - Set the items you want to add. See the “Making a Timer Recording” section for more information on Timer Recording Input items. (See pages 79~81)
4. Press the **OK** button to confirm the added setting.
5. Press the **EXIT** () button after finishing the operation. The Scheduled List screen will disappear.



Recording

Deleting a Scheduled List



Follow these directions to delete an entry from the Scheduled List.



Using the **TIMER** button

1. With the unit in Stop mode, press the **TIMER** button.
2. Press the **▲▼** button to select the **Scheduled List**, then press the **OK** or **▶** button.
3. Press the **▲▼** buttons to select the number of the Scheduled List you want to delete, and then press the **GREEN(B)** button.
 - You will be prompted with the delete confirm message such as “Do you want to delete?”.
4. Press the **◀▶** buttons to select **Yes**, then press the **OK** button.
 - The selected entry will be deleted from the list.
5. Press the **EXIT** (👉) button after finishing the operation.
The Scheduled List screen will disappear.

GO TO RECORDED LIST



You can confirm the performance results of title lists that have passed the reserved recording time.



Using the **TIMER** button

1. With the unit in Stop mode, press the **TIMER** button.
2. Press the **▲▼** button to select **Recorded List**, then press the **OK** or **▶** button.
3. Press the **EXIT** (👉) button after finishing the operation.
The Recorded List screen will disappear.

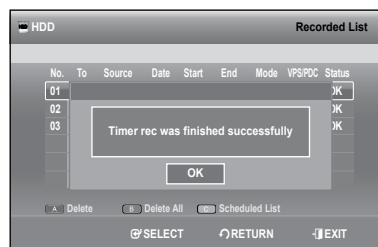
| HDD | | | | | | | | | |
|--------------------------------------|-----|--------|--------|-------|-------|------|-------|--------|--|
| Recorded List | | | | | | | | | |
| No. | To | Source | Date | Start | End | Mode | VSPDC | Status | |
| 01 | HDD | PR 01 | JAN 01 | 17:30 | 18:30 | SP | On | OK | |
| 02 | HDD | PR 01 | JAN 01 | 21:00 | 22:00 | SP | On | OK | |
| 03 | HDD | PR 01 | JAN 01 | 23:15 | 23:45 | SP | On | OK | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| A Delete B Delete All Scheduled List | | | | | | | | | |
| ⬆ MOVE ⌂ SELECT ↶ RETURN ↵ EXIT | | | | | | | | | |

Information about Recorded List

Informs whether the selected Recorded List performed a Timer Recording successfully.

To setup, follow steps 1 to 2 on Page 82.

- 3⁻¹. Press the **▲▼** buttons to select the number of the **Recorded List**, then press the **OK** button.
 - Check whether the timer Recording has set correctly or not.
 - Cancel a preset recording.

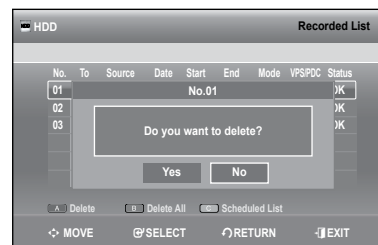


Delete Recorded List

Deletes a Recorded List individually.

To setup, follow steps 1 to 2 on Page 82.

- 3⁻¹. Press the **▲▼** buttons to select the number of the **Recorded List** you want to delete, and then press the **RED(A)** button.
4. Press the **◀▶** buttons to select **Yes**, then press the **OK** button.



Clear Recorded List

Clears all Recorded List at once.

To setup, follow steps 1 to 2 on Page 82.

- 3⁻¹. Press the **GREEN(B)** button.
4. Press the **◀▶** buttons to select **Yes**, then press the **OK** button.

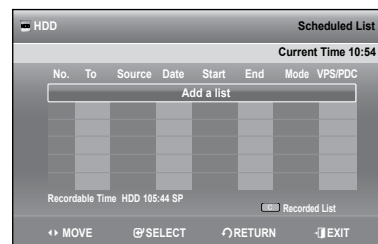


Go to Scheduled List

Switches directly from the Recorded List to the Scheduled List.

To setup, follow steps 1 to 2 on Page 82.

- 3⁻¹. Press the **YELLOW(C)** button.



Editing

This section introduces basic functions of editing and explains both edit functions for the recording on a disc and edit functions for the entire disc.

Recording or editing might not be completed if an error, such as a sudden power failure occurs. Please be aware that material that has been damaged is unable to be restored to its original state.

BASIC EDITING (TITLE LIST)



Playing the Title

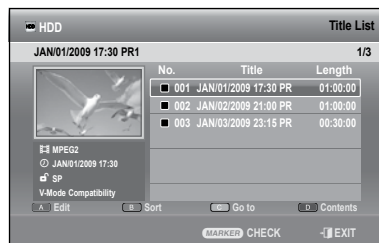


Follow these instructions to play back a scene from the Title List.



Using the TITLE LIST button

1. With the unit in Stop mode/Playback mode, press the **TITLE LIST** button.
2. Press the **▲▼** buttons to select an entry you want to play from Title List, then press the **OK** or **PLAY** () button.
The selected entry (title) will be played back.
3. To stop title play, press the **STOP** () button.
The screen returns to the Title List screen.



Renaming (Labelling) a Title

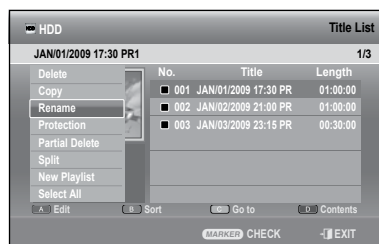
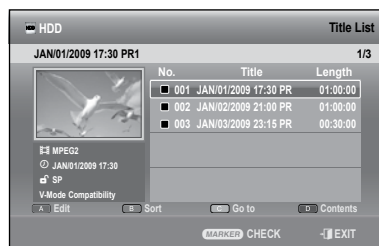


Follow these instructions to rename a title list entry, i.e., to edit the title of a recorded programme.



Using the TITLE LIST button

1. With the unit in Stop mode/Playback mode, press the **TITLE LIST** button.
2. Press the **▲▼** buttons to select an entry you want to rename from the Title List, then press the **RED(A)** button.
3. Press the **▲▼** buttons to select **Rename**, then press the **OK** or **▶** button.
The Rename screen is displayed.
4. Select the desired characters using the **▲▼◀▶** buttons, press the **OK** button.
 - **Back Space (RED(A) button)** : Deletes and moves the cursor backwards by one position.
 - **Space (GREEN(B) button)** : Enters a blank and moves the cursor one forward (to the right).
 - **Clear (YELLOW(C) button)** : Deletes all the character inputs.
 - **Save (BLUE(D) button)** : Registers the character inputs.



5. Press the **BLUE(D)** button to select **Save**.
The changed title name is displayed on the title item of the selected entry.



Locking (Protecting) a Title

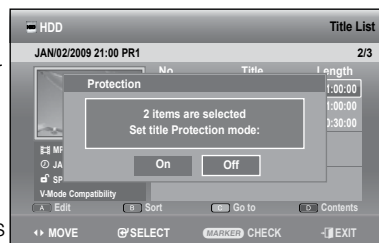
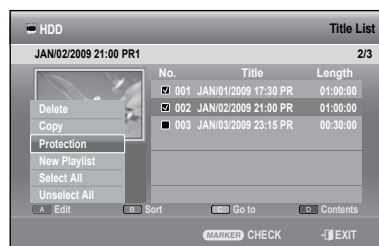


Follow these instructions to lock an entry to protect it from accidental edition.



Using the TITLE LIST button

1. With the unit in Stop mode/Playback mode, press the **TITLE LIST** button.
2. Press the **▲▼** buttons to select an entry you want to protect from the Title List, then press the **MARKER** button until a checkmark appears. Repeat this step to select an additional title you want to protect.
 - If you don't want to protect a certain one of the checked entries, simply select that entry and press the **MARKER** to deselect it until a checkmark disappears.
3. Press the **RED(A)** button to select **Edit**. Edit menu is displayed.
4. Press the **▲▼** buttons to select **Protection**, then press the **OK** or **▶** button.
5. Press the **◀▶** buttons to select **On**, then press the **OK** button. The key icon on the information window for the selected entry changes to the locked status. (🔒→🔒)
6. If you want to cancel the Protection, select **Off** in step 5 and press the **OK** button. The key icon changes to the unlocked status. (🔒→🔓)



- If you select "Select All" in the Edit menu, all title will be checked.

Editing

Deleting a Title

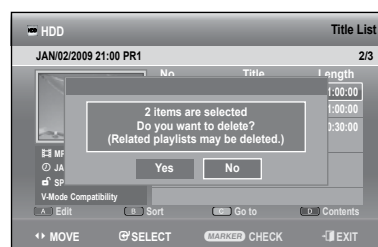
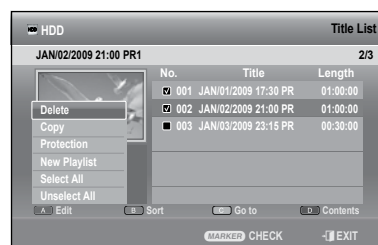


Follow these instructions to delete an entry from the Title List.



Using the TITLE LIST button

1. With the unit in Stop mode/Playback mode, press the **TITLE LIST** button.
2. Press the **▲▼** buttons to select an entry you want to delete in the Title List, then press the **MARKER** button until a checkmark appears. Repeat this step to select an additional title you want to delete.
 - If you don't want to delete a certain one of the checked entries, simply select that entry and press the **MARKER** to deselect it until a checkmark disappears.
3. Press the **RED(A)** button to select **Edit**. Edit menu is displayed.
4. Press the **▲▼** buttons to select **Delete**, then press the **OK** or **▶** button.
 - The message may be different depending on the type of disc. You will be prompted with the confirmation message.
HDD, DVD-RAM(VR mode), DVD-RW(VR mode) : The message "Do you want to delete? (Related playlists may be deleted.)" is displayed.
DVD-RW(V mode)/±RW/±R : The message "Do you want to delete?" is displayed.
5. Press the **◀▶** buttons to select **Yes**, then press the **OK** button.



- You cannot delete a protected entry. If you want to delete a protected entry, select "Off" in the Title Protection menu. (See page 85)
- When the Disc Protection has been set to Protected, you cannot delete titles. (See page 100)
- Once an entry is deleted from the Title List it cannot be recovered.
- Once DVD-RW/±R is finalised, it cannot be deleted.
- With DVD±R, titles are only deleted from the menu, however, the Title remains physically on the disc.
- If you select "Select All" in the Edit menu, all title will be checked.

Splitting a Section of a Title (Split)

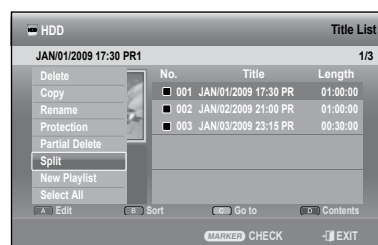


Follow these instructions to split a section of a Title List entry into two titles.

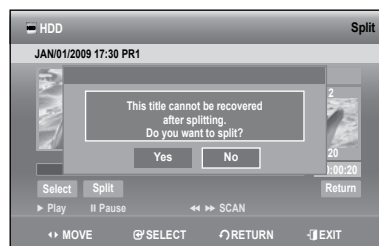
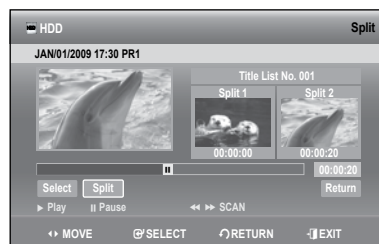


Using the TITLE LIST button

1. With the unit in Stop mode/Playback mode, press the **TITLE LIST** button.
2. Press the **▲▼** buttons to select an entry you want to Split from the Title List, then press the **RED(A)** button. The Edit menu is displayed.



3. Press the ▲▼ buttons to select **Split**, then press the **OK** or ► button.
4. Using the playback-related buttons (**PLAY** (▶), **PAUSE** (⏸), **SEARCH** (⏮ ⏭)), move to a point for splitting and press the **OK** button.
If it is not the point where you want to split, press the **RETURN** button to cancel the selection. Using the playback-related buttons, move to a point to split and press the **OK** button.
5. Press the **OK** button to select **Split**.
6. Press the ◀▶ buttons to select **Yes**, then press the **OK** button.
The split title is divided into two, and the following titles will be shifted down by one.



Deleting a Section of a Title (Partial Delete)

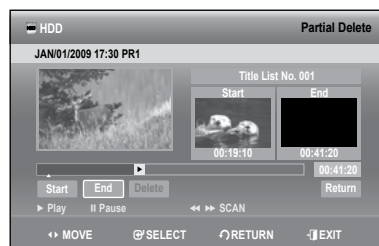
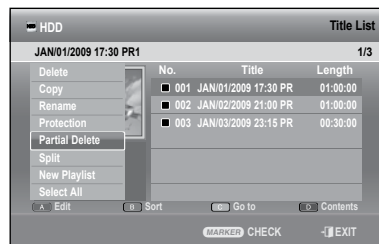


Follow these instructions to delete a section of a Title List entry.



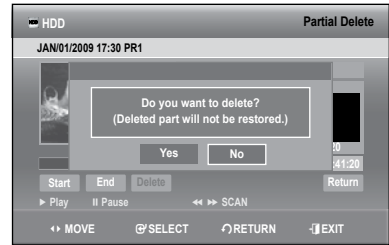
Using the TITLE LIST button

1. With the unit in Stop mode/Playback mode, press the **TITLE LIST** button.
2. Press the ▲▼ buttons to select an entry you want to edit from the Title List, then press the **RED(A)** button.
The Edit menu is displayed.
3. Press the ▲▼ buttons to select **Partial Delete**, then press the **OK** or ► button.
4. Press the **OK** button at the starting point.
The image and starting point time is displayed in the section deletion starting point window.
 - Select the start and end points of the section you want to delete using the playback related buttons.
 - Playback related buttons : (**PLAY** (▶), **PAUSE** (⏸), **SEARCH** (⏮ ⏭)).
5. Press the **OK** button at the end point.
The image and end point time is displayed in the Section deletion ending point window.



Editing

- Press the ◀ ▶ buttons to select **Delete**, then press the **OK** button.
- Press the ◀ ▶ buttons to select **Yes**, then press the **OK** button. The selected section has been deleted.
- Press the ◀ ▶ buttons to select **Return**, then press the **OK** button to finish the operation.



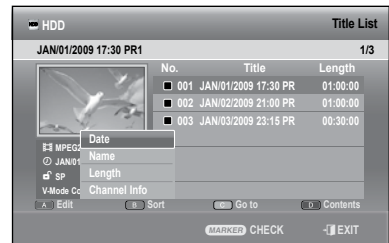
- The length of the section to be deleted must be at least 5 seconds long.
- End point cannot be marked earlier than start point
- The section cannot be deleted when it includes a still picture.
- Press the **EXIT** (🔍) button after the operation has finished. The Title List screen will disappear.

USING THE SORT FUNCTION (TITLE LIST)



When you need to change the Sort order of Title List, you can sort by Date, Name, Length, Channel info.

- While the list menu is displayed, press the **GREEN(B)** button to select **Sort**.
- Press the ▲ ▼ buttons to select the desired item, then press the **OK** or ▶ button.
 - Date** : In order of when the titles were recorded
 - Name** : In alphabetical order
 - Length** : In order of recorded title length.
 - Channel Info** : In order of Channel information.



- You can sort by Date, Name, Length, Channel info. Sorted list will be resorted in copied order upon re-entering the Title List.

NAVIGATION MENU

Time Navigation

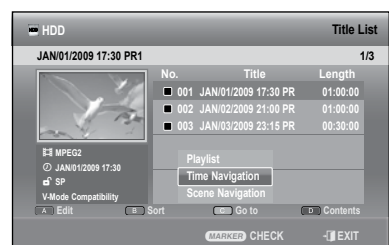


(VR mode)

Using this function, you can search scene minute-by-minute from the recorded title list.

Using the **TITLE LIST** button

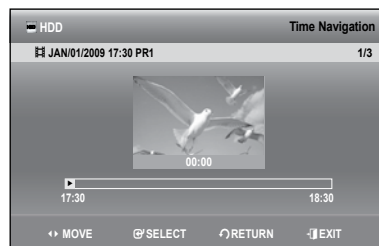
- With the unit in Stop mode/Playback mode, press the **TITLE LIST** button.
- Press the ▲ ▼ buttons to select an entry you want to play from Title List, then press the **YELLOW(C)** button.
- Press the ▲ ▼ buttons to select **Time Navigation**, then press the **OK** or ▶ button.



- Press the ◀ ▶ buttons to skip one minute at a time and search the desired scene, then press the **OK** or **PLAY** (▶) button.



- Cursor does not move if the selected recorded title is shorter than 1 minute.
- The Navigation function may not work on a disc that has not been recorded by this device.
- An edited title may not display the exact search time.



Scene Navigation

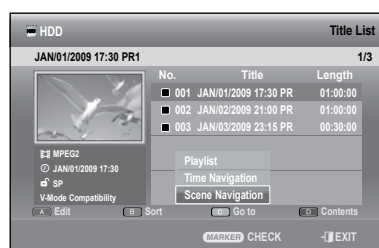


If there is a title composed of markers (See page 59), you can search the desired scene using the Scene Navigation.

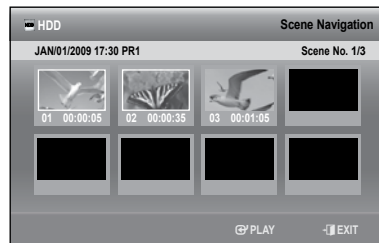


Using the TITLE LIST button

- With the unit in Stop mode/Playback mode, press the **TITLE LIST** button.
- Press the ▲ ▼ buttons to select an entry you want to play from Title List, then press the **YELLOW(C)** button.
- Press the ▲ ▼ buttons to select **Scene Navigation**, then press the **OK** or ▶ button.
- Press the ▲ ▼ ◀ ▶ buttons to select desired scene, then press the **OK** or **PLAY** (▶) button.



- Scene Navigation will not operate if a selected title does not have Markers.

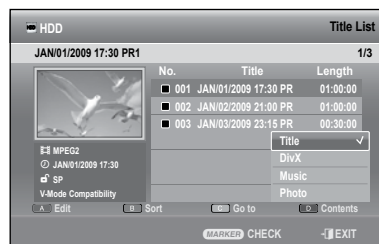


SELECT CONTENTS

- Press the **BLUE(D)** button to select **Contents**.
- Press the ▲ ▼ buttons to select the contents you want to move, then press the **OK** or ▶ button.



- This function is possible only when the disc contains the selected contents.



ADVANCED EDITING (PLAYLIST)

Creating a Playlist



(VR mode)

Follow these instructions to create a new playlist entry from a recorded title.

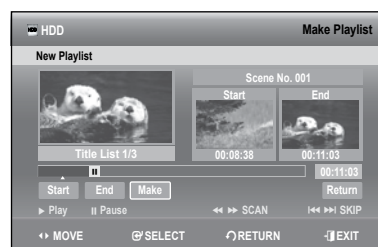
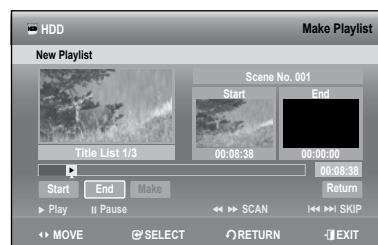
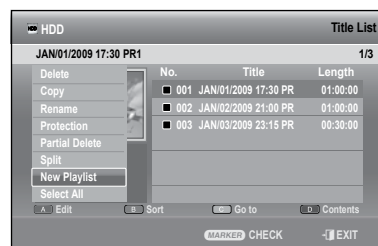


Using the TITLE LIST button

1. With the unit in Stop mode/Playback mode, press the **TITLE LIST** button.
2. Press the **RED(A)** button.
The Edit menu is displayed.
3. Press the **▲▼** buttons to select **New Playlist**, then press the **OK** or **▶** button.
The Make Playlist screen is displayed.
4. Press the **OK** button at the start point.
 - The image and time at the start point is displayed on the Start window.
 - The yellow-coloured selection bar moves to the **End** item.
 - Select the starting point of the section from which you want to create a new scene using the playback related buttons (**PLAY** (▶), **PAUSE** (⏸), **SEARCH** (⏮ ⏭), **SKIP** (⏮ ⏭)).
5. Press the **OK** button at the end point.
 - The image and end point time is displayed in the **End** window.
 - The yellow-coloured selection bar moves to the **Make** item.
6. Press the **◀▶** buttons to select **Make**, then press the **OK** button.
 - To make a scene for the playlist.
A new Make scene screen is displayed. Repeat steps 4~6 to make a new scene for the playlist. A new scene will be added to the current playlist. You can check and see all the scenes on the Edit playlist screen. (See pages 91~94)
 - To make a new playlist.
Repeat steps 1~6 if you want to make a new playlist.
7. Press the **◀▶** button to select **Return**, then press the **OK** button to finish the operation.



- You can create up to 99 playlist entries.
- Depending on the kind of disc, the displayed screen may have a slight difference.
- If the related title is erased, the playlist is also erased.



Playing Entries in the Playlist



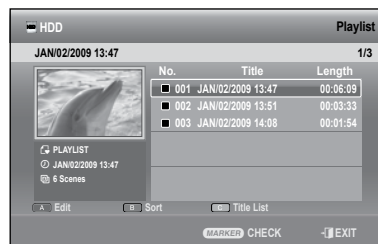
(VR mode)

Follow these instructions to play the playlist entries.



Using the PLAY LIST button

1. With the unit in Stop mode/Playback mode, press the **PLAY LIST** button.
2. Press the **▲▼** buttons to select the playlist you want to play, then press the **OK** or **PLAY** (▶) button.
3. Press the **STOP** (■) button to stop playing. The screen returns to the Playlist screen.



Renaming a Playlist Entry



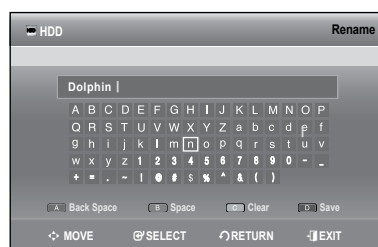
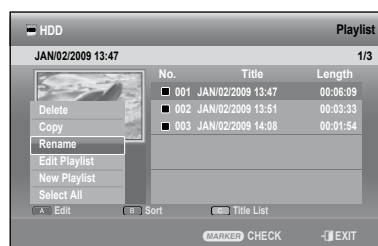
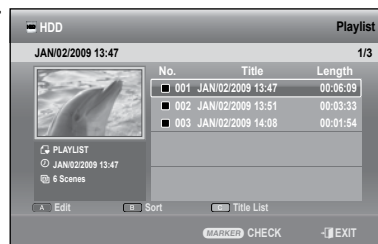
(VR mode)

Follow these instructions to rename a playlist entry, i.e. to edit the title of a playlist entry.



Using the PLAY LIST button

1. With the unit in Stop mode/Playback mode, press the **PLAY LIST** button.
2. Press the **▲▼** buttons to select the title you want to Rename from the Playlist, then press the **RED(A)** button. The Edit menu is displayed.
3. Press the **▲▼** buttons to select **Rename**, then press the **OK** or **▶** button. The Rename screen is displayed.
4. Select the desired characters using the **▲▼◀▶** buttons, then press the **OK** button.
 - **Back Space (RED(A) button)** : Deletes and moves the cursor backwards by one position.
 - **Space (GREEN(B) button)** : Enters a blank and moves the cursor one forward (to the right).
 - **Clear (YELLOW(C) button)** : Deletes all the character inputs.
 - **Save (BLUE(D) button)** : Registers the character inputs.
5. Press the **BLUE(D)** button to select **Save**. The changed title is displayed in the title field of the selected playlist entry.



Editing

Editing a Scene for the Playlist



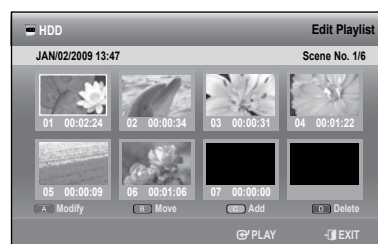
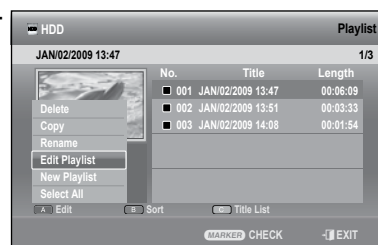
(VR mode)

Follow these instructions to edit scenes for a playlist.



Using the PLAY LIST button

1. With the unit in Stop mode/Playback mode, press the **PLAY LIST** button.
2. Press the **▲▼** buttons to select the title you want to edit from the Playlist, then press the **RED(A)** button.
The Edit menu is displayed.
3. Press the **▲▼** buttons to select **Edit Playlist**, then press the **OK** or **▶** button.
The Edit Playlist screen is displayed.



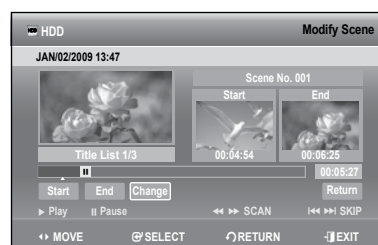
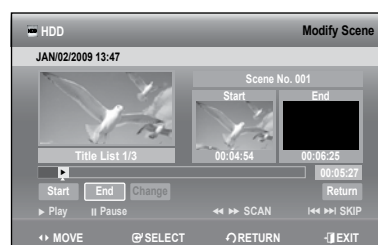
Playing a Selected Scene

4. Press the **▲▼◀▶** buttons to select the scene you want to play, then press the **OK** or **PLAY (▶)** button.
The selected scene is played.
 - To stop scene play, press the **STOP (■)** button.

Modifying a Scene (Replacing a Scene)

To setup, follow steps 1 to 3.

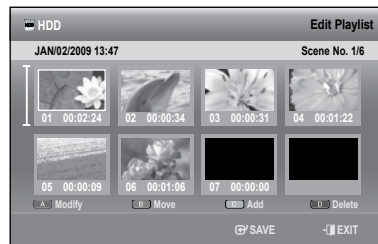
- 4-1. Press the **▲▼◀▶** buttons to select the scene you want to Modify, then press the **RED(A)** button.
The Modify Scene screen is displayed.
5. Press the **OK** button at the start point of the scene.
 - The image and starting point time is displayed on the **Start** window.
 - Select the starting or ending point of the section you want to modify using the playback related buttons (**PLAY (▶)**, **PAUSE (⏸)**, **SEARCH (⏮ ⏭)**, **SKIP (⏮ ⏭)**).
6. Press the **OK** button at the end point of the scene.
 - The image and ending point time is displayed in the **End** window.
7. Press the **◀▶** buttons to select **Change**, then press the **OK** button.
 - The scene you want to modify is changed with the selected section.



Moving a Scene (Changing the Position of a Scene)

To setup, follow steps 1 to 3 on page 92.

- 4-1. Press the **▲▼◀▶** buttons to select the scene you want to move (change the position), then press the **GREEN(B)** button.
 - A yellow selection window is displayed on the scene to be moved.
5. Press the **▲▼◀▶** buttons to select the position to which you want to move the selected scene, then select the **OK** button.

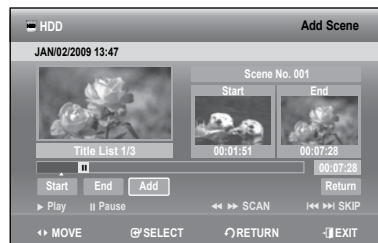
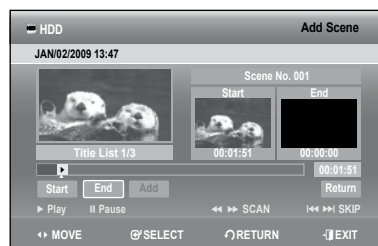


- You cannot move the selected scene to the position of the next scene, because the selected scene should be inserted before that position, which requires no action.
- Depending on the kind of disc, the displayed screen may have a slight difference.

Adding a Scene

To setup, follow steps 1 to 3 on page 92.

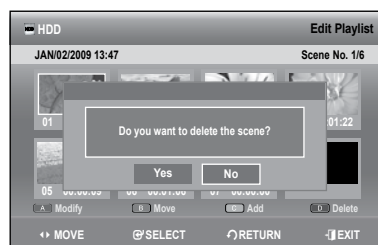
- 4-1. Press the **▲▼◀▶** buttons to select the scene that will have a new scene inserted before it, then press the **YELLOW(C)** button. The Add Scene screen is displayed.
5. Press the **OK** button at the starting point of the scene.
 - The image and starting point time is displayed on the **Start** window.
 - Select the starting or ending point of the section you want to modify using the playback related buttons (**PLAY** (▶), **PAUSE** (⏸), **SEARCH** (◀▶), **SKIP** (⏮⏭)).
6. Press the **OK** button at the end point of the scene.
 - The image and end point time are displayed in the **End** window.
 - To cancel, press the **◀▶** buttons to select **Return**, then press the **OK** button.
7. Press the **◀▶** buttons to select **Add**, then press the **OK** button.
 - The section you want to add is inserted prior to the scene selected in step 4-1 of Adding a Scene.



Deleting a Scene

To setup, follow steps 1 to 3 on page 92.

- 4-1. Press the **▲▼◀▶** buttons to select the scene you want to delete, then press the **BLUE(D)** button.
 - The message "Do you want to delete the scene?" is displayed.
5. Press the **◀▶** buttons to select **Yes**, then press the **OK** to delete the selected scene.



Editing

Deleting a Playlist Entry from the Playlist

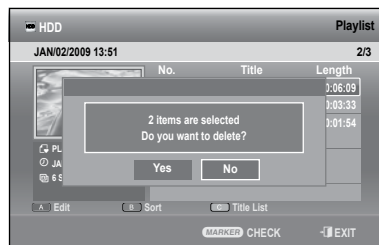
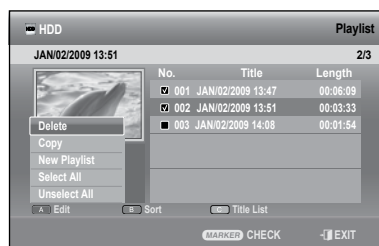
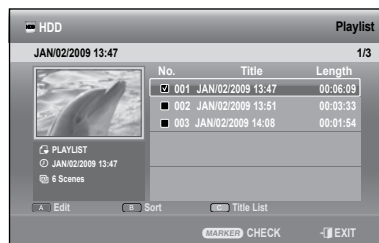


Using the PLAY LIST button

1. With the unit in Stop mode/Playback mode, press the **PLAY LIST** button.
2. Press the **▲▼** buttons to select an entry you want to delete in the **Playlist**, then press the **MARKER** button until a checkmark appears. Repeat this step to select an additional title you want to delete.
 - If you don't want to delete a certain one of the checked entries, simply select that entry and press the **MARKER** to deselect it until a checkmark disappears.
3. Press the **RED(A)** button to select **Edit**. Edit menu is displayed.
4. Press the **▲▼** buttons to select **Delete**, then press the **OK** or **▶** button.
 - You will be prompted with the delete confirmation message "Do you want to delete?".
5. Press the **◀▶** buttons to select **Yes**, then press the **OK** button. You will be automatically returned to the Playlist screen after the delete operation has finished.



- If you select "Select All" in the Edit menu, all titles will be checked.



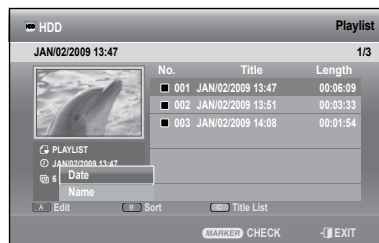
Using the Sort (Playlist)

When you need to change the Sort order of Playlist, you can sort by Date and Name.

1. While the list menu is displayed, press the **GREEN(B)** button to.
2. Press the **▲▼** buttons to select the desired item, then press the **OK** or **▶** button.
 - **Date** : In order of when the playlists were created
 - **Name** : In alphabetical order

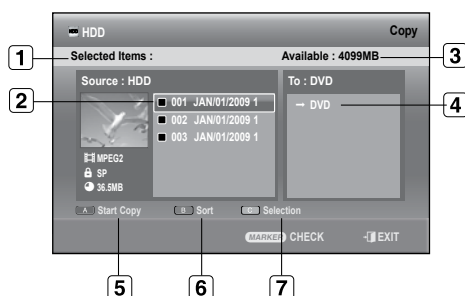


- You can sort by Date, Name. Sorted list will be resorted in copied order upon re-entering the Playlist.



COPYING FROM HDD TO DVD OR VICE-VERSA

About the Copy Screen



- 1 Total size and number of selected titles for copying
- 2 Title to be copied
- 3 This shows available disc space
- 4 The location where the copied files are stored
- 5 Copy start button
- 6 Sort button (Date, Name, Length, Channel Info)
- 7 Selection button
 - **Select All** : All entries in the current folder will be checked.
 - **Unselect All** : All checked entries will be unchecked.

Contents Copy Specifications

| Contents | HDD → DVD | DVD → HDD |
|----------------------|--|---------------|
| Recorded Video Title | Supported | Supported |
| Copy Protected Title | Not supported | Not supported |
| Copy Once Title | Move (Deletes the Title in the HDD after copying) | Not supported |

Copying is possible only with a CPRM-Compatible disc.

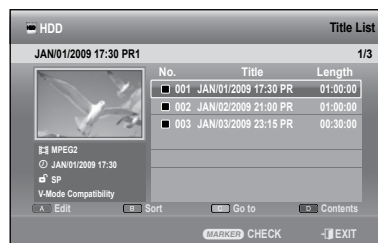
Once "Copy Once programme" has been recorded on the DVD disc, this title cannot be copied to HDD anymore.

But "Copy Once programme" has been recorded on the HDD, this title can be copied to DVD-RW(VR mode) or DVD-RAM.



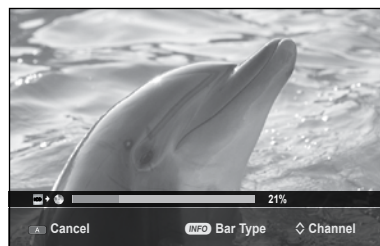
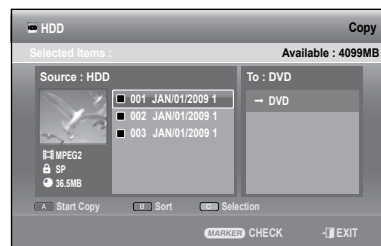
Using the TITLE LIST button

1. Press the **OPEN/CLOSE** button and place a recordable disc on the disc tray.
2. Press the **OPEN/CLOSE** button to close the disc tray. Wait until **LOAD** disappears from the front panel display. Check that the disc has enough available space for the recording.
3. Select a desired mode by pressing the **HDD** or **DVD** button on the remote control.
You can also select a desired mode by pressing the **HDD/DVD** button on the front panel.
4. With the unit in Stop mode/Playback mode, press the **TITLE LIST** button.



Editing

5. Press the **RED(A)** button, then press the **▲▼** button to select **Copy**.
Press the **OK** button. Copy screen is displayed.
6. Press the **▲▼** buttons to select the title you want to copy, then press the **MARKER** button until a checkmark appears.
Repeat this step to select an additional title you want to copy.
 - If you don't want to copy a certain one of the checked entries, simply select that entry and press **MARKER** button to deselect it until a checkmark disappears.
7. Press the **RED(A)** button to select **Start Copy**.
 - The title to be copied is not displayed on the screen, and copying begins while the currently broadcasting programme is displayed on the screen.
 - Press the **INFO** button to change the copy processing bar. If you press **INFO** button again, copy processing bar will be appeared.
 - To cancel the copying in progress, press the **RED(A)** button.
8. After a successful copy, "The title is successfully copied" message is displayed.



- The HDD & DVD Recorder uses high speed copying and therefore there may be a small amount of noise.

DVD-Video Copy

1. Press the **OPEN/CLOSE** button and place a DVD-Video disc on the disc tray.
2. Press the **OPEN/CLOSE** button to close the disc tray.
3. During the playback, press the **COPY** button.
Copying will be started.

- The Copy function will be disabled in the if you try to copy any of the following:
 - A section of the menu.
 - A NTSC disc or copy-protected disc
 - Titles that are different in the broadcasting system
- The audio title that is copied to the HDD will be recorded in the 2ch AC3 format.
- For the audio output in DTS mode, the audio source will not be copied.



COPYING MP3, JPEG OR DIVX

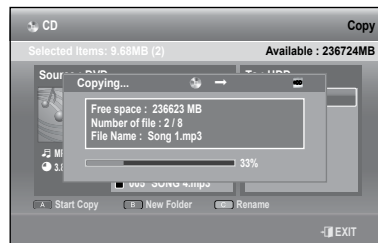
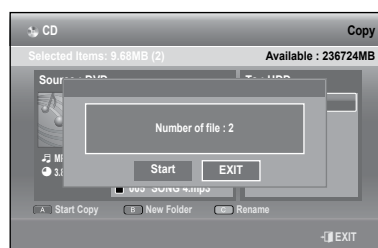
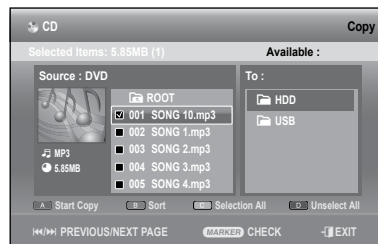
Contents Copy Specifications

| Contents | HDD → DVD or USB | DVD → HDD or USB | USB → HDD or DVD |
|-------------|------------------|------------------|------------------|
| MP3 | Supported | Supported | Supported |
| JPEG(photo) | Supported | Supported | Supported |
| DivX | Supported | Supported | Supported |
| CD-DA | Not supported | Supported | Not supported |

- Disc(CD-DA/CD-R/CD-RW/DVD-RAM/DVD±R(Finalise)/DVD+RW/DVD-RW(Finalise)) → HDD or USB
- HDD → DVD-R, DVD-RW(V) or USB
- USB → HDD or DVD-R, DVD-RW(V)
- PTP USB is not available when you copy to USB.
- If the disc is finalised through Disc Manager, it can be compatible with PC as a disc with a UDF file system.

File Copy

1. Insert a JPEG disc, MP3 disc or DivX disc into the disc tray.
2. Press the **OPEN/CLOSE** button to close the disc tray. Wait until **LOAD** disappears from the front panel display. Check that the disc has enough available space for the recording.
3. Press the **▲▼** buttons to select **Library**, then press the **OK** or **▶** button.
4. Press the **▲▼** buttons to select **Music**, **Photo** or **DivX**, then press the **OK** or **▶** button.
5. Press the **RED(A)** button, then press the **▲▼** button to select **Copy**. Press the **OK** button. Copy screen is displayed.
6. Press the **▲▼** buttons to select the MP3, Photo or DivX file you want to copy, then press the **MARKER** button until a checkmark appears.
 - If you don't want to copy a certain one of the checked entries, simply select that entry and press **MARKER** button to deselect it until a checkmark disappears.
7. Press the **▶** button, then press the **OK** button to make the first folder where the copied files are stored.
 - You can create a new folder by pressing the **GREEN(B)** button.
8. Press the **RED(A)** button to select **Start Copy**.
 - The message "Number of file : x" is displayed.
9. Press the **◀▶** buttons to select **Start**, then press the **OK** button. File copy begins.
 - To cancel the copying in progress, press the **EXIT** (⏏) button.



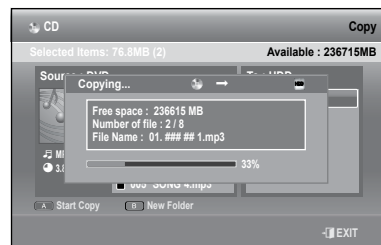
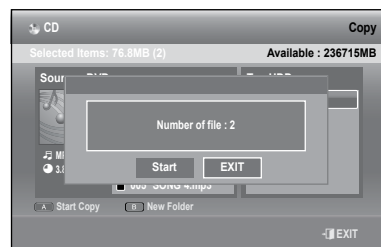
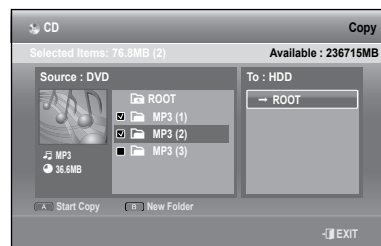
Folder Copy

1. Insert a Disc (JPEG, MP3 or DivX) into the tray.
2. Press the **▲▼** buttons to select **Library**, then press the **OK** or **▶** button.
3. Press the **▲▼** buttons to select **Music**, **Photo** or **DivX** then press the **OK** or **▶** button. MP3, JPEG or DivX folder is displayed.



Editing

4. Press the **RED(A)** button, then press the **▲▼** button to select **Copy**.
Press the **OK** button. Copy screen is displayed.
5. Press the **▲▼** buttons to select the folder you want to copy, then press the **MARKER** button until a checkmark appears.
 - If you don't want to copy a certain one of the checked folders, simply select that entry and press **MARKER** button to deselect it until a checkmark disappears.
6. Press the **▶▲▼** or **OK** button to select the location where the copied files are stored.
 - You can create a new folder by pressing the **GREEN(B)** button.
7. Press the **RED(A)** button to select **Start Copy**.
The message "Number of file : x" is displayed.
 - The item is named the number of file that is available in the folder.
8. Press the **◀▶** buttons to select **Start**, then press the **OK** button.
Folder copy begins.
Subfolders and files in the selected folder are copied.
 - To cancel the copying in progress, press the **EXIT** (🖱️) button.



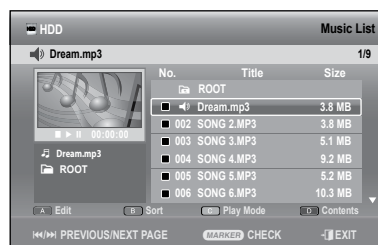
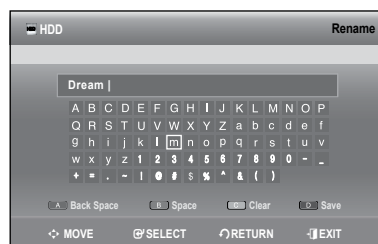
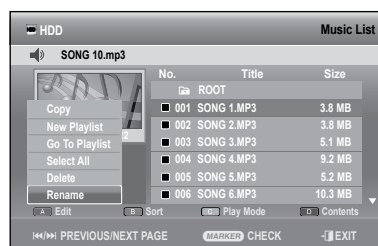
- Pressing the **EXIT** (🖱️) button during folder copying will cancel the folder copying after the current file is copied.
- You can copy up to 500 files or sub folders to one folder. [MP3, JPEG, DivX]
- If you want file copy, you should create a new folder before starting a copy.
You cannot copy to top-level(ROOT) folder directly without creating a new folder.
- If the top-level (ROOT) folder has had already 500 folders, you should delete one or more items before you can create a new folder.
- File size on a disc and the copied file in the HDD may be slightly different due to the file system.
- If you check some entries in the current folder and move to open a different folder, those entries are automatically unchecked and excluded from the selection list.

CHANGING THE NAME OF MUSIC/PHOTO/DIVX FILE



You can rename a Music, Photo or DivX file copied to HDD.

1. Press the ▲▼ buttons to select the entry you want to rename, then press the **RED(A)** button.
2. Press the ▲▼ buttons to select **Rename**, then press the **OK** or ► button.
Rename Screen is displayed.
3. Select the desired characters using the ▲▼◀▶ buttons, then press the **OK** button.
 - **Back Space (RED(A) button)** : Deletes and moves the cursor backwards by one position.
 - **Space (GREEN(B) button)** : Enters a blank and moves the cursor one forward (to the right).
 - **Clear (YELLOW(C) button)** : Deletes all the character inputs.
 - **Save (BLUE(D) button)** : Registers the character inputs.
4. Press the **BLUE(D)** button to select **Save**.
The changed file name is displayed on the selected entry.



DISC MANAGER

Editing the Disc Name

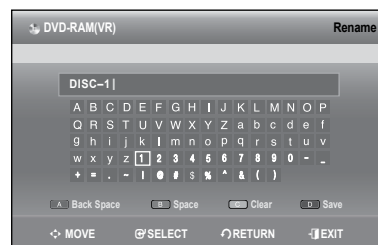
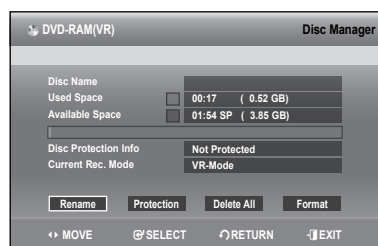


Follow these instructions to give a name to a disc.

1. With the unit in Stop mode, press the **MENU** button.
2. Press the ▲▼ buttons to select **Disc Manager**, then press the **OK** or ► button.
3. Press the ◀▶ buttons to select **Rename**, then press the **OK** button.
The Rename screen is displayed.
4. Select the desired characters using the ▲▼◀▶ buttons, then press the **OK** button.
5. Press the **BLUE(D)** button to select **Save**.
A disc name is given to the disc.



- You may need to clear Disc Protection before editing.
- Depending on the kind of disc, the displayed screen may be different.
- If you have recorded a DVB-T radio channel program, the time information displayed for each of free and used space may be incorrect.

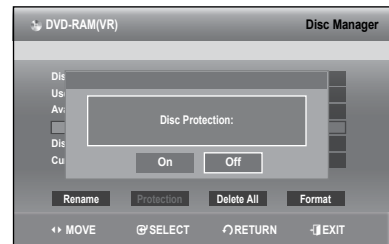
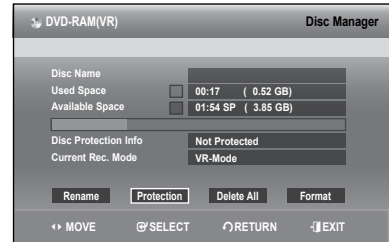


Disc Protection



Disc Protection allows you to protect your discs from being formatted or deleted due to unintended operations.

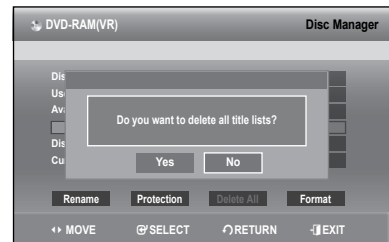
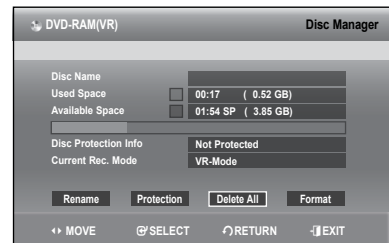
1. With the unit in Stop mode, press the **MENU** button.
2. Press the **▲▼** buttons to select **Disc Manager**, then press the **OK** or **►** button.
3. Press the **◀▶** buttons to select **Protection**, then press the **OK** button.
4. Press the **◀▶** buttons to select **On**, then press the **OK** button.



Delete All Title Lists



1. With the unit in Stop mode, press the **MENU** button.
2. Press the **▲▼** buttons to select **Disc Manager**, then press the **OK** or **►** button.
3. Press the **◀▶** buttons to select **Delete All**, then press the **OK** button.
 - You will be prompted with the confirmation message "Do you want to delete all title lists?".
 - When Protected Entry exists the Delete All Title List function will not operate. If there is a title containing a still picture, the Delete All Title List function will not operate. If you want to delete a protected entry, disable Protect for it on the Lock item.
 - When a protected DVD-RAM/-RW is used, data cannot be deleted from that disc.
 - If you select **Yes**, you will be prompted with the confirmation message "All playlists will also be deleted. Do you want to continue?".
4. Press the **◀▶** buttons to select **Yes**, then press the **OK** button. All title lists are deleted.



Delete All Title Lists/DivX Lists /Music Lists/Photo Lists

1. With the unit in Stop mode, press the **MENU** button.
2. Press the **▲▼** buttons to select **Disc Manager**, then press the **OK** or **►** button.
3. Press the **◀▶** buttons to select **Delete**, then press the **OK** button.
4. Press the **◀▶** buttons to select the **Title**, **DivX**, **Music** or **Photo**, then press the **OK** button.
5. Press the **◀▶** buttons to select **Yes**, then press the **OK** button.
All title lists, DivX lists, music lists or photo lists are deleted.



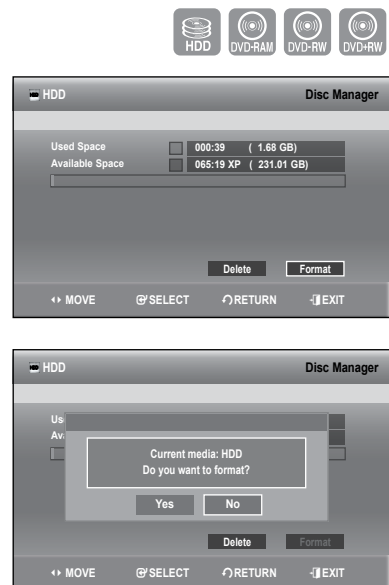
Formatting a Disc

Use these instructions to format a disc.
The disc protect should also be cleared.

1. With the unit in Stop mode, press the **MENU** button.
2. Press the **▲▼** buttons to select **Disc Manager**, then press the **OK** or **►** button.
3. Press the **◀▶** buttons to select **Format**, then press the **OK** button.

HDD/DVD-RAM/+RW

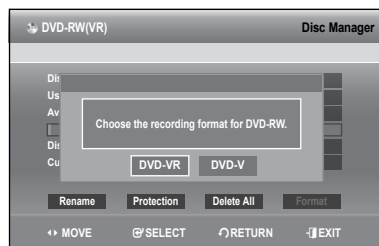
- You will be prompted with the confirmation message "Current media : *** Do you want to format?".
- If you select **Yes**, you will be prompted with the confirmation message "All data will be deleted. Do you want to continue?".



Editing

DVD-RW

- You will be prompted with the confirmation message “Choose the recording format for DVD-RW.”
 - If you select the desired format type, you will be prompted with the confirmation message “All data will be deleted. Do you want to continue?”.
- Press the ◀ ▶ buttons to select **Yes**, then press the **OK** button. The disc is formatted.



DVD-VR and DVD-V are defined according to their recording format.

| | DVD-VR | DVD-V |
|------|-------------|--------------|
| DISC | DVD-RAM/-RW | DVD-RW/DVD-R |

- With DVD+RW discs, there is no difference between DVD-Video format (Video mode) and DVD-Video Recording format (VR mode).

Finalising a Disc

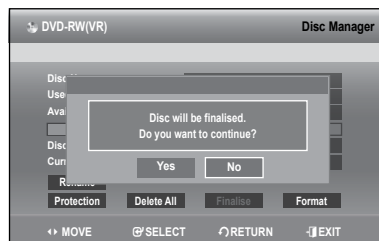
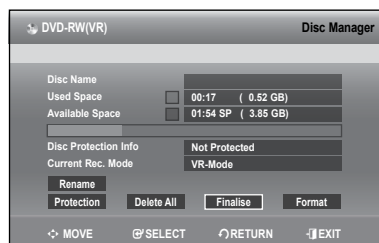


After you record titles onto a DVD-RW/±R disc with your HDD & DVD Recorder, it needs to be finalised before it can be played back on other devices.

- With the unit in Stop mode, press the **MENU** button.
- Press the ▲▼ buttons to select **Disc Manager**, then press the **OK** or ▶ button.
- Press the ▲▼◀▶ buttons to select **Finalise**, then press the **OK** button. You will be prompted with the message “Do you want to finalise disc?”.
- Press the ◀ ▶ buttons to select **Yes**, then press the **OK** button. You will be prompted again with the message “Disc will be finalised. Do you want to continue?”.
- Press the ◀ ▶ buttons to select **Yes**, then press the **OK** button. The disc is finalised.

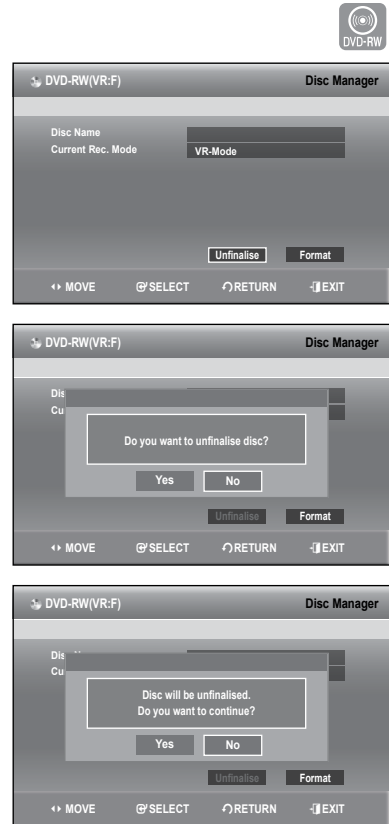


- Once a disc is finalised, you cannot delete entries from the record list.
- After being finalised, the DVD±R/-RW(video mode) operates in the same manner as a DVD-Video.
- Depending on the disc type, the displayed screen may be different.
- Finalising time may be different depending on the amount of data recorded on the disc.
- Data on the disc will be damaged if the recorder is powered off during finalisation process.
- You can finalise the disc automatically using EZ Record. (See page 48)



Unfinalising a Disc (V/VR mode)

1. With the unit in Stop mode, press the **MENU** button.
2. Press the **▲▼** buttons to select **Disc Manager**, then press the **OK** or **▶** button.
3. Press the **◀▶** buttons to select **Unfinalise**, then press the **OK** button.
You will be prompted with the message “Do you want to unfinalise disc?”.
4. Press the **◀▶** buttons to select **Yes**, then press the **OK** button.
You will be prompted again with the message “Disc will be unfinalised. Do you want to continue?”.
5. Press the **◀▶** buttons to select **Yes**, then press the **OK** button.
The disc is unfinalised.



- A DVD-RW can be finalised or unfinalised in Video mode.

| | Finalise | Unfinalise |
|-----------|-------------------|---|
| Mark | DVD-Video(RW) | DVD-RW(V) |
| Operation | Same as DVD-Video | Additional recording, protection and deletion are possible. |

- A DVD-RW can be finalised or unfinalised in VR mode.

| | Finalise | Unfinalise |
|-----------|---|---|
| Mark | DVD-RW(VR:F) | DVD-RW(VR) |
| Operation | Additional recording, deletion, editing, and protection are impossible. | Additional recording, deletion, editing, and protection are possible. |

Reference

TROUBLESHOOTING

If your product malfunctions, go through the checkpoints below before contacting a Samsung authorised service centre.

| PROBLEM | EXPLANATION/SOLUTION |
|---|---|
| The input is displayed for a while when the power is turned on. | The HDD & DVD Recorder requires some time to initialise and the input will be displayed for approx. 10 seconds after it is turned on. |
| Cannot record TV programmes. | <ul style="list-style-type: none">• Check whether the power cord is securely plugged into the power outlet.• Did you set the HDD & DVD Recorder channel settings correctly?• Check the free space on your HDD/DVD-RAM/±RW/±R discs. |
| I pressed the REC button but there is no response. | Check available disc type. (See page 69) If a programme is copy protected, it cannot be recorded. |
| Cannot play the disc. | <ul style="list-style-type: none">• Check whether the disc is inserted correctly with the label facing up.• Check the regional code of the DVD disc.• This HDD & DVD Recorder cannot play some types of discs. (See pages 8, 53) |
| ⊙ icon appears on the screen. | You cannot use this operation or function due to one of the following reasons: (1) Your DVD disc restricts it. (2) Your DVD disc does not support this feature (for example: angles) (3) The feature is not available at the moment. (4) You've requested a title, chapter, or scan time that is out of range. |
| Play mode settings are different from the settings configured in the Settings menu. | The disc does not support all selected functions. In this case, some settings configured in the settings menu may not work properly. |
| Cannot change the aspect ratio. | The aspect ratio is fixed for DVD discs. (See page 43) |
| The angle operation does not work while playing a DVD disc. | The angle operation is available only when the disc contains images captured from different angles. |
| The selected audio and/or subtitle language is not played. | Audio and subtitle languages are disc-specific. Only the sound and subtitle languages contained on the DVD disc are available and displayed in the disc menu. |
| Cannot copy title or file to the other mode. | <ul style="list-style-type: none">• DVD discs encoded with copy protection can not be copied to HDD.• Refer to "Contents Copy Specifications" on page 7 to check if copying is supported.• Refer to "V-Mode Compatibility" on page 48 to check if copying is support. |
| The disc revolves, but no image or bad quality images is displayed. | <ul style="list-style-type: none">• Be sure that the Video Setting is properly set. (See pages 43~44)• Check whether there is damage to or any foreign material on your disc.• Some low quality discs may not play properly.• If scenes change from dark to bright suddenly, the screen may shake vertically temporarily, but this is not a fault. |

| PROBLEM | EXPLANATION/SOLUTION |
|---|---|
| No sound. | <ul style="list-style-type: none"> • Are you watching a programme in slow or skip mode? If you are playing a programme at a speed other than normal speed, sound will not be heard. (Except for forward search (X 2) in disc.) • Check the connections and settings. (See pages 26~31, 42~43) • Check whether the disc is damaged. Clean the disc, if necessary. • Check whether the disc is inserted correctly with the label facing up. |
| No audio output. | Check whether you have selected the correct digital output options in the Audio Output Options menu. (See pages 42~43) |
| Timer lamp flickers. | <ul style="list-style-type: none"> • Check there is enough space in the disc or HDD for recording. • Check whether the current disc is recordable or not. Make sure to check before the start time of recording. |
| Timer recording does not work properly. | <ul style="list-style-type: none"> • Re-check the recording time and the end time settings again. • Recording will be cancelled if the power is interrupted due to a power failure or another similar reason while recording. |
| Cannot copy into USB or vice-versa | <ul style="list-style-type: none"> • Check the USB connection. Disconnect and try to connect again. • Refer to "Compatible USB devices at host port" on page 8. |
| No HDMI output. | <ul style="list-style-type: none"> • Check the Video output is HDMI enabled. • Check the connection between the TV and the HDMI jack of the HDD & DVD Recorder. • See if your TV supports HDMI. |
| Abnormal HDMI output screen. | If snow noise appears on the screen, it means that TV does not support HDCP (High bandwidth Digital Content Protection). |
| HDMI output Jitter. | <ul style="list-style-type: none"> • Check your TV system setup correctly. • Please refer to the user's manual of your TV. |
| The remote control doesn't work. | <ul style="list-style-type: none"> • Point the remote control at the remote control sensor on your HDD & DVD Recorder. Allow for proper distance. Remove obstacles between your HDD & DVD Recorder and the remote control. • Check whether the batteries are drained. • Check the TV/DVD selection button setting. • Check whether TV, DVD or HDD control button is selected or not. |
| I forgot my password for parental supervision. | Press and hold the PLAY/PAUSE (II) buttons on the front panel for more than 10 seconds with no disc in the unit. All settings including the password will revert to the factory settings. Do not use this unless absolutely necessary. |
| Is it possible to change a subtitle and an audio signal on a recorded disc? | A recorded disc is played with only the subtitle and the audio signal which were selected during recording. |
| Other problems. | <ul style="list-style-type: none"> • Read the table of contents and then find and read the section describing your problem, follow the instructions given. • Plug your HDD & DVD Recorder off and on. • If the problem still persists, contact a nearby Samsung service centre. |

Appendix

SPECIFICATIONS

| | | | |
|--------------|----------------------------|-----------------|--|
| General | Power requirements | | 220-240 V AC, 50 Hz |
| | Power consumption | | 28 Watts / 1 Watts (Power off) |
| | Weight | | 3.6 Kg |
| | Dimensions | | 430 mm(W) x 300 mm(D) x 55 mm(H) |
| | Operating temp. | | +5 °C to +35 °C |
| | Other conditions | | Keep level when operating. Less than 75% operating humidity |
| Input | Video | | Composite Video : 1.0 V p-p at 75Ω load, sync negative |
| | Audio | | Max.Audio Input Level : 2 Vrms |
| | DV Input | | IEEE 1394(4p) compatible jack |
| | Receivable Channels | | PAL-I |
| | Scart Jack | AV2 (Scart Ext) | Video : Composite, RGB, Audio: analogue |
| Output | Audio | | Analogue output jacks x 1 Optical digital audio output |
| | Video | | Composite Video : Video output jack x 1 Component output x 1 (Y : 1,0Vp-p, P _B : 0,70Vp-p, P _R : 0,70Vp-p at 75Ω load) HDMI/DVI (576p, 720p, 1080i, 1080p) |
| | Scart Jack | AV1 (Scart TV) | Video : Composite, RGB, Audio: analogue |
| | Picture Compression format | | MPEG-II |
| | Audio Compression format | | Dolby Digital 2ch/256Kbps, MPEG-II |
| Recording | Recording Quality | | XP (about 8,5 Mbps), SP (about 4,5 Mbps), LP (about 2,5 Mbps), EP (about 1,6 Mbps or about 1,2 Mbps) |
| | Audio Frequency Response | | 20 Hz~20 kHz |
| HDD Capacity | DVD-SH893M | | 160 GB |
| | DVD-SH895M | | 250 GB |
| | DVD-SH897M | | 320 GB |
| USB | USB 2.0 H/S | | Host x 1 |

Audio Output

For DVD discs, audio signals recorded at 96 kHz sampling frequency are converted into and output at 48 kHz.

| Disc Type | DVD | AUDIO CD (CD-DA) |
|-----------------------|-------------|------------------|
| Analogue Audio Output | 48 / 96 kHz | 44,1 kHz |
| Digital Audio Output | 48 kHz | 44,1 kHz |



UNITED KINGDOM



EIRE

This Samsung product is warranted for the period of twelve (12) months from the original date of purchase, against defective materials and workmanship. In the event that warranty service is required, you should return the product to the retailer from whom it was purchased.

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Samsung Electronics U.K. Ltd.
Customer Care Centre PO Box 17243 Edinburgh,
EH11 4YB United Kingdom

United Kingdom
Tel : 0845 SAMSUNG (7267864)
Fax : 0845 650 8080
Web : www.samsung.com

EIRE
Tel : 0818 717 100
Fax : +44 (0)131 202 0630
Web : www.samsung.com/ie

■ WARRANTY CONDITIONS

1. The warranty is only valid if, when warranty service is required, the warranty card is fully and properly completed and is presented with the original invoice or sales slip or confirmation, and the serial number on the product has not been defaced.
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3. Warranty repairs must be carried out by Authorised Samsung Dealers or Authorised Service Centres. No re-imbursement will be made for repairs carried out by non Samsung Dealers and, any such repair work and damage to the products caused by such repair work will not be covered by this warranty.
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5. This warranty covers none of the following:
 - a) Periodic check ups, maintenance and repair or replacement of parts due to normal wear and tear.
 - b) Cost relating to transport, removal or installation of the product.
 - c) Misuse, including the failure to use this product for its normal purposes or incorrect installation.
 - d) Damage caused by Lightning, Water, Fire, Acts of God, War, Public Disturbances, incorrect mains voltage, improper ventilation or any other cause beyond the control of Samsung.
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The GNU General Public Licence (GPL)

Version 2, June 1991

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Preamble

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When we speak of free software, we are referring to freedom, not price. Our General Public Licences are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this licence which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licences, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

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Activities other than copying, distribution and modification are not covered by this Licence; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this Licence and to the absence of any warranty; and give any other recipients of the Program a copy of this Licence along with the Program.

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- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this Licence. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this Licence, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this Licence, whose permissions for other licencees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this Licence.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

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- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

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If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public licence practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this Licence.

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If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

One line to give the program's name and a brief idea of what it does.

Copyright (C) <year> <name of author>

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This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public Licence for more details.

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Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

Gnomovision version 69, Copyright (C) year name of author Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'. This is free software, and you are welcome to redistribute it under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public Licence. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program 'Gnomovision' (which makes passes at compilers) written by James Hacker.

signature of Ty Coon, 1 April 1989
Ty Coon, President of Vice

This General Public Licence does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public Licence instead of this Licence.

GNU Lesser General Public Licence (LGPL)

Version 2.1, February 1999

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[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public Licence, version 2, hence the version number 2.1.]

Preamble

The licences for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licences are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This licence, the Lesser General Public Licence, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this licence or the ordinary General Public Licence is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licences are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this licence, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive licence from a patent holder. Therefore, we insist that any patent licence obtained for a version of the library must be consistent with the full freedom of use specified in this licence.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public Licence. This licence, the GNU Lesser General Public Licence, applies to certain designated libraries, and is quite different from the ordinary General Public Licence. We use this licence for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public Licence therefore permits such linking only if the entire combination fits its criteria of freedom.

The Lesser General Public Licence permits more lax criteria for linking other code with the library.

We call this licence the "Lesser" General Public Licence because it does Less to protect the user's freedom than the ordinary General Public Licence. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public Licence for many libraries. However, the Lesser licence provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public Licence.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public Licence is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This Licence Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public Licence (also called "this Licence"). Each licensee is

addressed as “you”.

A “library” means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The “Library”, below, refers to any such software library or work which has been distributed under these terms. A “work based on the Library” means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/ or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term “modification”).

“Source code” for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this Licence; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library’s complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this Licence and to the absence of any warranty; and distribute a copy of this Licence along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this Licence.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this Licence, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this Licence, whose permissions for other licencees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this Licence.

3. You may opt to apply the terms of the ordinary GNU General Public Licence instead of this Licence to a given copy of the Library. To do this, you must alter all the notices that refer to this Licence, so that they refer to the ordinary GNU General Public Licence, version 2, instead of to this Licence. (If a newer version than version 2 of the ordinary GNU General Public Licence has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public Licence applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a “work that uses the Library”. Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this Licence.

However, linking a “work that uses the Library” with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a “work that uses the library”. The executable is therefore covered by this Licence. Section 6 states terms for distribution

of such executables.

When a “work that uses the Library” uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a “work that uses the Library” with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer’s own use and reverse engineering for debugging such modifications.

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